

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

FIRST AERONAUTICAL WEEKLY IN THE WORLD

Founded in 1909 by
Stanley Spooner

DEVOTED TO THE INTERESTS,
PRACTICE AND PROGRESS OF
AERIAL LOCOMOTION AND
TRANSPORT

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1325. Vol. XXVI. 26th Year.

MAY 17, 1934

Weekly, Price 6d.
Post Free, 7½d. Abroad, 8d.

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES:

Dorset House, Stamford Street, London, S.E.1

Telegrams: "Truditur, Watloo, London."
Telephone: Hop 3333 (50 lines).

Subscription Rates, Post Free.			
UNITED KINGDOM		OTHER COUNTRIES	
	s. d.		s. d.
3 Months ..	8 3	3 Months ..	8 9
6 " ..	16 6	6 " ..	17 6
12 " ..	33 0	12 " ..	35 0

CONTENTS

	PAGE
Editorial Comment:	
Working Up to Parity ..	475
The Deutsch Cup ..	476
Cheaper Air Mails ..	476
The Development of Aviation in New Zealand ..	477
The Coupe Deutsch ..	480
Air Transport ..	482
Reduce the Air Mail Rates ..	484
Airport News ..	485
The Altitude Record ..	487
Airisms from the Four Winds ..	488
The Blackburn T.S.R. ..	490
From the Clubs ..	491
Safety in the Air ..	493
Correspondence ..	494
Comfortable Speed ..	495
King's Cup Air Race ..	496
Williamson Camera Gun ..	497
The Royal Air Force ..	498
The Industry ..	500

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- May 17-June 2. Royal Tournament, Olympia.
May 18. Entries close at ordinary fee for King's Cup Race.
May 21. Air Display, Loughton Aerodrome, Essex.
May 24. Empire Air Day.
May 26. Opening of Doncaster Airport.
May 27. Deutsch de la Meurthe Cup.
May 30. Entries close at double fee for King's Cup Race.
May 31. Conversazione and "Stalling." Wilbur Wright Memorial Lecture, by Prof. B. Melvill Jones, before R.Ae.S.
May 31. Celebration Banquet, Guildhall, Hull, on occasion of First International Air Service (Hull-Amsterdam).
June 1. Entries close at 12 noon for London-Melbourne Race.
June 2. Brooklands Air Race Meeting.
June 2. Brooklands "At Home."
June 3. London Aeroplane Club Garden Party, Hatfield.
June 9. Reading Ae.C. Annual "At Home."
June 16. R.A.F. Reserve Flying Club Annual Flying Display, Hatfield.
June 23. Lancashire Ae.C. Air Display, Woodford.
June 23. Henly Rally, Heston Airport.
June 30. Royal Air Force Display, Hendon.
July 3-9. 4th International Congress for Applied Mechanics, Cambridge.
July 7. Opening of Leicester Airport.
July 8. French International 12-Hours Reliability Trial.
July 13-14. King's Cup Race. Start and finish at Hatfield.
July 21. Round the Isle of Wight Air Race.
July 21-22. French Grand Prix.
July 28. Bristol and Wessex Ae.C. Garden Party.
July 29. London-Sherburn Race (York County Aviation Club)

Working up to Parity

THE Prime Minister is undergoing a constant bombardment in Parliament from members of the Air Committee of the House of Commons who are urging an immediate increase of the Royal Air Force up to a condition of parity with Continental nations. It is a very good thing that the Air Committee should be thus active and should keep the Government awake to the very real feeling of anxiety in the country about our comparative weakness in the air. At the same time it is hard not to feel some sympathy with the Prime Minister when he is asked practically the same question over and over again. His stereotyped answer now is to refer the questioner to the answer which he gave a day or two before to the last questioner.

There was a little lively variation on this monotonous procedure one day when Com. Locker-Lampson asked the Government to raise a loan for the purpose of "giving us the right position in the air." This drew Mr. MacDonald a little, and he replied: "Raising a loan does not represent all the difficulties that are involved in doing that," and to a further question by Mr. Whiteside he added that "Parity has to be worked up to."

We have always recognised that an immediate large increase of the Royal Air Force in the conditions of peace was not to be expected, and that it was therefore futile to demand it. If some good fairy (the mind at once turns to Lady Houston, who has actually offered a contribution) were to write a cheque for all the money required to increase our air strength up to parity, we should still have to wait a while and build up gradually. Machines could probably be produced most quickly of all, but they are not the whole of the problem. We cannot immediately increase the number of officers to any great extent, except by reopening the two Flying Training Schools which have been closed down (Netheravon and Digby), and we have never considered it good policy to engage a large number of short service officers. Permanent commissions cannot be given to them all, as there are not enough senior posts to provide them all with careers. Whether an immediate large increase in the number of airmen pilots is possible is a matter which would require a good deal of consideration.

The question of accommodation must not be forgotten. At present the Air Ministry is rather short of aerodromes, and even more short of barrack accommodation. These cannot be provided by a wave of a wand. Steady building up to parity seems to be the only practicable policy.

The Deutsch Cup

MUCH of the International interest in the race for the Deutsch de la Meurthe Cup, which is to be flown from the Etampes-Mondésir aerodrome, near Paris, on May 27, vanished when it was announced that Italy had cancelled her entries. The only other non-French entry is a British one, that of Flt. Lt. N. Comper, who will be flying the little "Streak" designed by himself. On the face of it, the British challenger is severely handicapped in not having a maximum-sized engine. Whereas the French defenders of the Deutsch Cup have engines of just under the 8-litres capacity permitted by the regulations, and fitted with variable pitch propellers, superchargers, and so forth, the de Havilland "Gipsy Major" engine in Comper's machine is of 6,125 c.c. only, and is naturally aspirated. In addition, Comper is relying on a Fairey fixed-pitch metal airscrew.

All this sounds as if Comper is wasting his time in taking the "Streak" to France, the more so when it is pointed out that some of the French engines are believed to develop well over 300 h.p., while the "Gipsy Major" gives a maximum of 146 b.h.p. at 2,400 r.p.m. Actually the position is by no means as hopeless as the figures might indicate. The Deutsch Cup Race is over two distances of 621½ miles each. This means that the aeroplanes will either have to carry enough fuel to cover that distance, with some reserve for emergencies, or they will have to land *en route*. Landing is permitted, and as the actual course is a triangular one, with Etampes-Mondésir as one of the turning points, they can land there to re-fuel. But the time so spent will count as flying time. Unless, therefore, the French defenders are prepared to waste precious time in re-fuelling, they will have to carry enough petrol for more than 600 miles. If their engines develop twice the power of that of the British entry, they will also consume at least twice as much petrol. In fact, they will most likely consume more than twice, as a supercharged engine is quite likely to be somewhat extravagant in its consumption.

The extra weight of the fuel must of necessity mean that the machines themselves must be of larger wing area, or else the French pilots must take the risk of greater landing speeds, longer take-off runs, and so forth. In his notes this week on the French machines, our Paris correspondent states that several of them are fitted with wingflaps to reduce landing speed and gliding angle. This refinement is not found on the Comper "Streak," but, in spite of this, the machine lands at a speed which cannot by any means be described as excessive. Retractable undercarriages also promise to be a feature of the Coupe Deutsch machines this year. In this respect the "Streak" starts level with the rest.

Exactly what Mr. Comper is up against is indicated by the fact that last year the race was won by M. Detre, on a Potez monoplane with a 310-h.p. 9-cyl. radial Potez supercharged engine, at an average speed of 200.572 m.p.h. It is to be assumed that French designers have, in the meantime, "found" another few miles per hour, so that the British machine will have to do something over 200 m.p.h. to stand a chance. Will it do it? So far as we know, the answer to that cannot be given at the moment, even by Flt. Lt. Comper himself. The "Streak" has not yet been flown with undercarriage retracted, and may possibly not be so flown until the actual race. The speed figures corresponding to undercarriage "down" are encouraging, but the increase in speed with the wheels "up" can only so far be estimated.

At any rate, the whole of the British aviation community will wish Comper the best possible luck in his very gallant and sporting challenge.

Cheaper Air Mails

ADMIRAL SIR MURRAY SUETER needs no introduction to readers of FLIGHT. He was the first Director of the Air Department at the Admiralty, and he is now Chairman of the Air Committee of the House of Commons. On another page of this issue will be found an article from his pen in which he calls for a reduction of air mail rates. It is a closely reasoned article and its conclusions would be difficult to refute. Especially telling is his allusion to the opposition met by Sir Roland Hill when he introduced the internal penny post. The Treasury was aghast at the threatened loss of revenue, but the actual result was a huge profit for them. The case of the extension of the penny post to the whole of the British Empire might also have been quoted, for that, too, was a step which required courage at the time, but one that has proved of immense public benefit.

The only moment when excuse can be made for high postal charges of any description is that at which the nation as a whole is so financially hard pressed that revenue must be raised in every possible direction and by every possible means. This penny postal rate was raised during the war simply because of the great national need for money. As the habit of writing many letters had, by then, become ingrained in the private citizens and business houses of the country, the rise in postage rate did not result in any great curtailment of this habit.

But the use of the air mail is not yet an ingrained habit of the British people, chiefly because of the present high charges. There is, therefore, every prospect that a reduction in rates would end in such an increase in its use that the profits of the State would soon begin to swell. There is a very great difference between mulcting an established business and laying a crushing weight on an infant industry. The former is often strong enough to bear the burden, while the latter is merely stunted in its growth.

Even though we may not yet be able to return to the inland penny post, there is still good reason for a reduction of the present heavy charges on mails carried throughout the Empire by air.

LAND OF THE MAORIS



PAPAKURA: A small town on the Manukau Harbour, in the neighbourhood of Auckland.

The Development of Aviation in New Zealand

By "Aileron"

"Aileron" has had extensive experience of flying in various parts of the world, and has for a number of years been Aviation Editor of the "New Zealand Herald"—a newspaper which strongly supports and encourages the development of aviation in that far-away Dominion

CONSIDERING that the light aeroplane movement is only in its fifth year of operation in New Zealand, and taking into account the numerous difficulties that have confronted both clubs and private owners, it can be said that the present state of development of aviation throughout the two islands is well advanced.

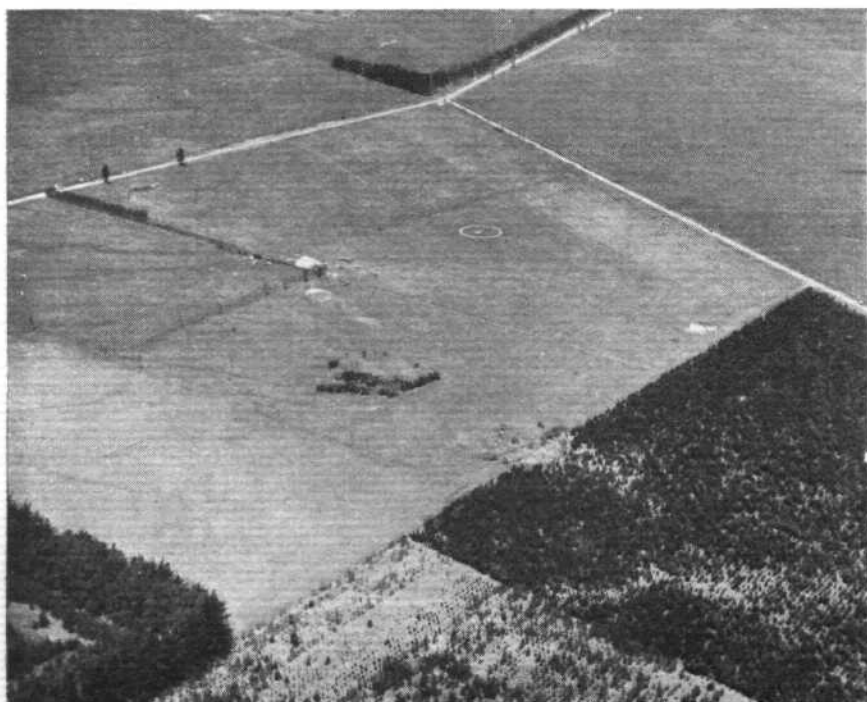
Nearly five hundred pilots have been trained by the clubs to the standard of an "A" licence, the essential features of ground organisation are being put into operation, and it is now more generally believed that aviation will in time to come perform a multitude of useful duties that could not be covered by other means of transport. The responsibility of converting the small population, the

sum total of which is only a million and a half, to a greater consciousness of the value of travel and transport by air, has rested almost entirely with the civilian side, if only because the New Zealand Royal Air Force is but a skeleton structure.

Before dealing with the subject of aviation in its general application to the whole country, it would be as well to examine more closely the state of service and semi-service flying. The territorial unit of the N.Z.R.A.F. is known as the N.Z.A.F., and consists of about seventy officers, who are allotted to four regular squadrons. Annual training is carried out at Wigram Aerodrome, Christchurch, where the squadrons attend in rotation, and the various exercises are held under the supervision of the permanent staff. Owing to the fact that Government expenditure on the Air Force has always been what can only be described as niggardly, the aeroplanes which are used for training are not sufficiently up to date to be of very much use. There are Bristol Fighters, "Grebes," Hawker "Tomtits," and "Moths." The Treasury has always preferred to complete the year's work with as favourable a balance as possible, and every time there is any money left over it is instantly transferred to another fund. In the year 1931-32, only £24,570 was set aside for expenditure on the Air Force, and in the following year the amount was even less.

Subsidies

The limits imposed on the work of the permanent and territorial forces have meant that the leadership in carrying the civil aviation movement into effect has been taken principally by the light aeroplane



A NEW ZEALAND AERODROME: Situated in the vicinity of Hastings, Hawkes Bay, this aerodrome was used extensively during the terrible earthquake of 1931.

A TOWN IN THE MAKING :
Martinborough, in the Wairarapa,
has been well planned from the
start.

clubs. In England and other countries where there is a large and efficient Air Force, it is usually possible to launch a scheme which is dependent upon active public support by organising a series of pageants and special displays calculated to stir up a general feeling of enthusiasm. In 1929 the Government commenced a scheme of subsidising a limited number of light aeroplane clubs, of which there are now nine receiving assistance. The subsidy is in the form of (a) loan of aeroplanes and (b) a payment to the club on account of each pupil who qualifies for an "A" licence. The nine clubs have had the use of twenty aircraft on loan, and have received £7,665 in subsidies.

The method of control is on much the same lines as in other countries. Civil aviation is subject to the Air Navigation Regulations, 1933, which are based on the authority of the Air Navigation Act, 1931. The administration of these regulations is left in the hands of the Minister of Defence, and the executive officer is the Controller of Civil Aviation, Defence Department. The regulations conform to the International Air Convention for the regulation of aerial navigation, signed at Paris on behalf of New Zealand in 1919. Examinations for all types of licences are held periodically in the different centres, and the conditions conform to the syllabus of the examinations in England.

The Clubs

When the first wave of enthusiasm swept the country, and hurried meetings were held to elect officers and decide upon a course of action, it was possible to obtain permission to hold a small sweepstake (an "Art Union") for any cause that came under the heading of a "public body." The executive of the Auckland Aero Club, a particularly live group of individuals, was the first to apply for the Government's sanction to hold an "Art Union." An extensive campaign was then undertaken for the purpose of selling as many tickets as possible, and three



aeroplanes made a tour of the North Island. The response was beyond their dreams, and after a few months of hard work it was suddenly found that the club possessed £13,800! Of course, there was an immediate rush by other clubs in the country to obtain permits for other Art Unions, but the ground had been well tilled and their share of the crop was proportionately less. Later on, there were so many applications from almost every type of organisation that the Government was forced to declare a share-out in the profits of each Art Union, so that some clubs had to be content with considerably smaller sums. It was clearly a case of the early bird . . . and the worm was a big one!

Commercial aviation has never played a leading part in New Zealand on account of the lack of specialised knowledge required to run a successful aviation company, diffidence on the part of the public, absence of any prior organisation, and the high cost of engines and aeroplanes. Those were the main factors which had to be overcome by the strength of any company before there was the slightest chance that it would receive a subsidy from the Government. Now, however, there is a "compromise"

type of commercial aeroplane, fitting in between the light aeroplane and the large transport type, and a passenger or mail air service is likely to be a more practical proposition. Any demand there has been for special flights and tours has been catered for by the small companies or the aeroplane clubs.

There has, however, been an endless succession of visits by private individuals and aero club machines to those places which gave promise of providing a sufficient number of flights. When one considers the conditions under which these joyriding excursions have been made, and the types of landing grounds that were used, a word of praise should be added for the skill of the pilots concerned. Racecourses, beaches, river beds, dry mud-flats, gullies, and untested paddocks have all been visited, and flying has continued



NO LANDINGS HERE! The Rimutaka Ranges, north of Wellington Harbour. Note the railway in the valley.

until the supply of passengers has given out or until it has been too dark to see. The usual procedure preparatory to such a tour of the country is for the pilot to fly over some likely looking settlement and "drop in" on the most suitable looking bit of ground. If everything is satisfactory, the place is entered on a list which, when complete, is sent to the Director of Air Services. It then becomes known as a "recognised landing ground" for the purposes of the visit, but whether that term is supposed to make the temporary aerodrome any more suitable is still a matter for conjecture. The response from the less frequented parts of the country is always good, and, judging by the enthusiastic manner in which some of the local residents vie with each other in paying for stunt flights, there must be a remarkable amount of latent interest in New Zealand.

The climate and configuration of the country will bear some description. Almost a thousand miles long, and narrow in proportion, New Zealand contains more extremes in matters of weather and contour than a great many other places of similar size. The most perfect flying country is provided in the Canterbury plains, the centre of the wheat-producing district, where for miles there is a succession of paddocks, some of which have as large an area as 300 acres. Adjoining this stretch are the Southern Alps, which rise almost sheer from the plains, and it is not necessary to include any remarks about the unsuitability of this country from the flying point of view.

So much for the contrast in contour. In climate this contrast is equally pronounced, because the frequent high winds and driving rain storms, which are features of the winter season, are liable sometimes to replace the consistently fine weather of the summer with a rapidity that is likely to prove disconcerting to the pilot. When visibility is good, however, flying is quite ideal, and the good visibility, coupled with the abundance of mountain, river, and coastal landmarks makes the use of maps almost unnecessary.

The Position To-day

The present stage of the development of aviation in New Zealand is due almost entirely to the influence of the movement in Australia. If it had not been for the example that has been set from time to time in Australia, there

would probably have been little civil flying. Australia is closer to the flying centres of activity, and the best of the experience was sent across the Tasman Sea to provide that necessary impetus. By his visit to New Zealand in 1928, in the *Southern Cross*, Sir Charles Kingsford Smith started the initial wave of enthusiasm that was to result in the establishment of clubs throughout the country. Since that first trip, Sir Charles has made two return visits, and it is a tribute to his popularity with the public that in each case his reception has been just as spontaneous and widespread. Mr. C. T. P. Ulm, who was originally associated with Sir Charles, has made flights from Australia to New Zealand and back carrying the first trans-Tasman air mail, and these have helped considerably to stimulate the interest of the business man and private individual in flying as a means of transport.

There is a great deal of public interest centred at present in the successful test flights of the Codock monoplane at Mascot Aerodrome, and a large measure of this attention comes from New Zealand. The manufacture of this twin-engined aeroplane within such a reasonable distance of New Zealand may have considerable influence in this country. At the present it is impossible to purchase aeroplanes not manufactured either in England, America, or on the Continent, and the added costs of freight and exchange make importation impracticable. If it is found that the production of the Codock can be undertaken in Australia on an economic basis, it follows that, later on, other aeroplanes will be designed and built, and New Zealand may at some distant date be supplied with suitable types of machines at a reasonable price.

Up to the present time, New Zealand has not enjoyed the advantages of a national air service, and, consequently, the general attitude towards any proposal for the formation of a company is very favourable. A proposal has been made to inaugurate a service connecting Auckland, Wellington, Christchurch, and Dunedin, and with a feeder line embracing Gisborne, Hastings, and the Wairarapa district. The main centres will thus be connected, and travel which previously took days will be reduced to a matter of hours. To everyone in New Zealand it will be a new experience to be able to use air transport in the ordinary course of business or pleasure. Even the least ardent supporter agrees that the time is ripe for the introduction of air transport on a regular basis.



VARIETY: The township of Petone, situated on the Wellington Harbour. Behind this settlement tower 1,500 ft. of mountains.

COUPE DEUTSCH

Eight entries for the Deutsch de la Meurthe Cup, comprising seven French and one English plane, have passed their qualifying tests within the required period, April 6th—May 7th, and are now receiving finishing touches for the Contest itself, which takes place on May 27th next

THE qualifying trials included a flight of 500 km. (310.7 miles) to be flown at a minimum speed of 250 km/h. (155.3 m.p.h.). The planes, in addition, were required to take off within a distance of 550 metres (602 yards) and to clear two cords stretched across the field at a height of one metre, one cord being placed at the end of 550 metres and the other 50 metres farther on. The machines were also required to fly over these two cords on landing and come to a stop within 550 metres of the second cord passed over. These performances were to be accomplished with a wind of less than 6 metres per second (13.4 m.p.h.) prevailing.

The Contest this year promises to be a particularly interesting one, and some new speed records for light planes are expected to be established. Several new planes have been built, together with engines specially designed for this race. These engines will be supercharged and will drive variable pitch propellers automatically adjustable in flight. A number of planes will be equipped with split flaps, and in most cases with retractable landing gears.

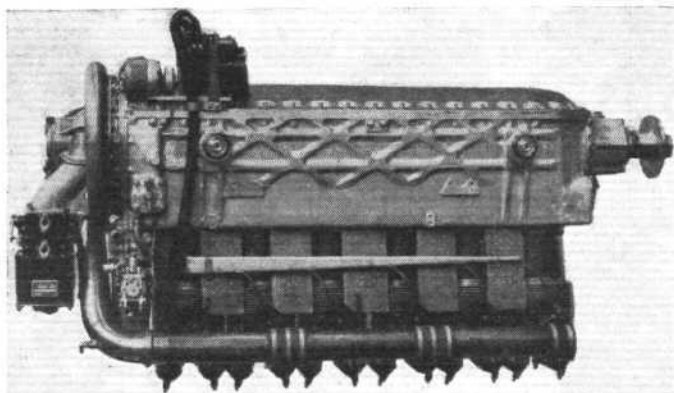
Entry and Racing No.	Engine h.p. and r.p.m.	Aircrew.	Landing gear.
Caudron, C.450 ..	Renault, 310 h.p. approx. 3,000 r.p.m. approx.	Ratier, V.P.	Fixed
Caudron, C.460, 6 ..	" " "	"	Retractable
Caudron, C.460, 7 ..	" " "	"	"
Caudron, C.460, 10	" " "	"	"
Potez, 1 ..	Potez, 315 h.p. approx. ..	Levasseur ..	"
Potez, 2 ..	Potez, 340-360 h.p. approx.	Ratier, V.P.	"
Regnier Co. Caudron Plane.	Regnier, 217 h.p. ..	"	"
Comper Aircraft Co. Type "Streak," 12.	"Gipsy Major" Special, 146 h.p., 2,400 r.p.m.	Fairey ..	"

The Caudron Planes

The four Caudron low-wing, single-seater monoplanes, type C.450 and C.460, have been especially designed and built for this race. The wings are fitted with split flaps. The tailplane is adjustable in flight and can be operated with, or independent of, the wing flaps. These planes are equipped with the new Renault 6-cyl., in-line, inverted, aircooled, supercharged direct-drive engine of approximately 310 h.p. They have a maximum cylinder displacement of 7.95 litres. Ratier two-bladed, variable-pitch propellers, automatically adjustable in flight, will be used.

The fuselage has rectangular sections, with a semi-elliptical bottom and a semi-circular top surface. It is equipped with fuel tanks having jettison valves, and the pilot's seat is fitted with a sliding windshield. The engine mounting is attached to the fuselage with four bolts.

On the type 450, the undercarriage is a fixed one, of the



FOR THE DEUTSCH CUP: The 6-cyl. supercharged Renault engine.

cantilever, split-axle type, with independent wheels, 420 x 150, which are fitted with "spats." Charles shock absorbers are used.

On the type 460, the undercarriage is retractable. It is also fitted with independent wheels, 420 x 15, and is equipped with Messier oleo-pneumatic shock absorbers. The retracting mechanism consists of automatic jacks, Charles type. The undercarriage is automatically locked in place when once raised in position.

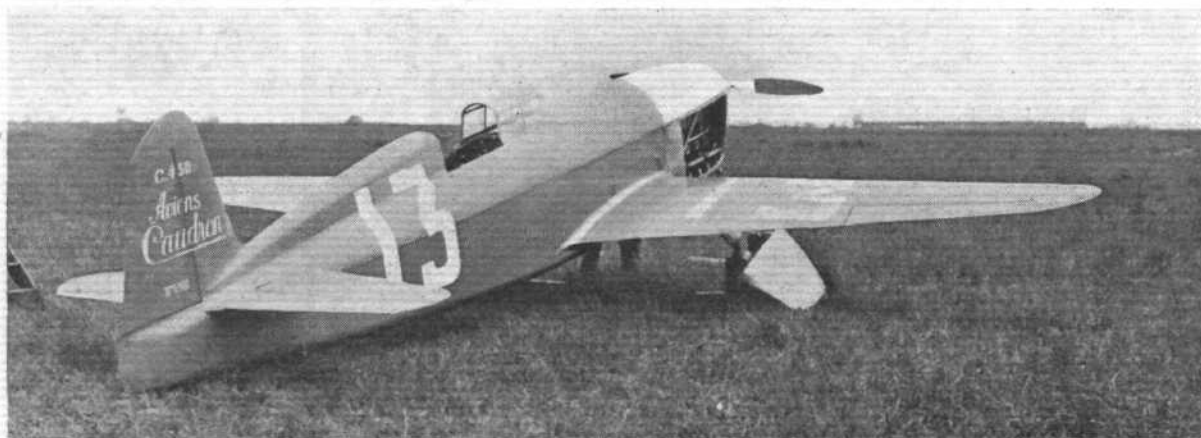
The controls are of the semi-rigid type mounted on ball bearings, and are statically balanced.

The wings, tail and fuselage are constructed of spruce and birch plywood, and covered with fabric. Electrically welded steel tubes and a high-tensile light alloy are employed in the construction of the engine mounting. The engine cowling and fuel tanks are made of magnesium. Special dopes are used.

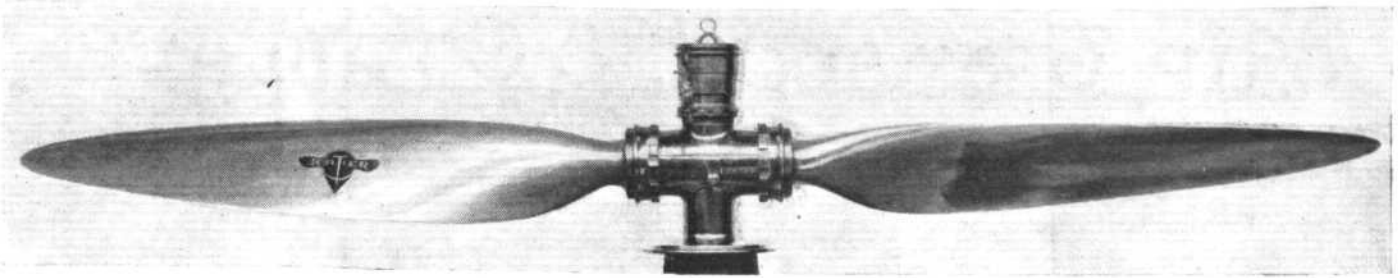
The general characteristics of the Caudron types C.450 and C.460 are as follows:—Wing span, 6.75 m. (22 ft. 2 in.); length, 7.125 m. (23 ft. 4 in.); height, 1.8 m. (5 ft. 11 in.); wing area, 7 sq. m. (75.35 sq. ft.); weight, empty, 520 kg. (146 lb.); useful load, 355 kg. (73 lb.); total weight, 875 kg. (1,919 lb.).

The New Renault Engine

The new Renault 6-cyl. in-line, inverted, air-cooled, supercharged, direct-drive engine which equips the Caudron planes has been designed to produce the maximum h.p. with a cylinder displacement of 8 litres, and thus to come within the Deutsch Cup regulations. The general characteristics are as follows:—Bore, 109.75 m/m.;



TESTED BY DELMOTTE: The Caudron C.450, with 310-h.p. Renault engine.



AN AID TO TAKE-OFF : The Ratier variable-pitch propeller, which automatically changes from low to high pitch when a certain air speed has been reached.

stroke, 140 m/m.; cylinder displacement, 7.95 litres (485.74 cu. in.); compression ratio, 6:1. The engine is fitted with a Renault centrifugal supercharger running at about 20,000 r.p.m. A Viet compressed-air starter is used. Weight, 210 kg. (463 lb.); length, 1.54 m. (5 ft.); width, 0.45 m. (1 ft. 5½ in.). The engines used will be direct-drive to Ratier two-bladed variable-pitch propellers automatically adjustable in flight.

While not as yet officially announced, it is expected that this engine will produce approximately 310 h.p. at about 3,000 r.p.m.

The Ratier Variable Pitch Propeller

The Ratier variable-pitch propeller, automatically adjustable in flight, will equip six out of the seven French planes entered in the Deutsch de la Meurthe Cup Race on May 27 next. This propeller has two conventional settings, one for low pitch, to be used for the take-off and climb of the plane, the other for the high pitch desired for the high speeds. The second comes into play when once the desired altitude has been attained. The change in pitch is made automatically through the wind pressure exerted on an anemometric plate mounted on the front end of the hub.

1934 Regulations

The International Race for the Coupe Deutsch de la Meurthe was initiated by the Aero Club of France in honour of its late President, M. Deutsch de la Meurthe, and the Challenge Cup which bears his name is valued at 20,000 francs.

For the 1934 race the regulations are similar to those which were in force last year. The contest is confined to aeroplanes fitted with engines of a capacity not exceeding 8 litres (488.191 cu. in.). This is the only limitation placed upon competing aircraft, and there is no stipulation concerning minimum speed, it being left to competitors to decide for themselves how far they think it safe to go in high landing speed. Repairs and refuelling during the race are permitted, but any stops made count as flying time.

The actual race, which will take place on May 27 at the Etampes-Mondésir aerodrome, near Paris, is divided

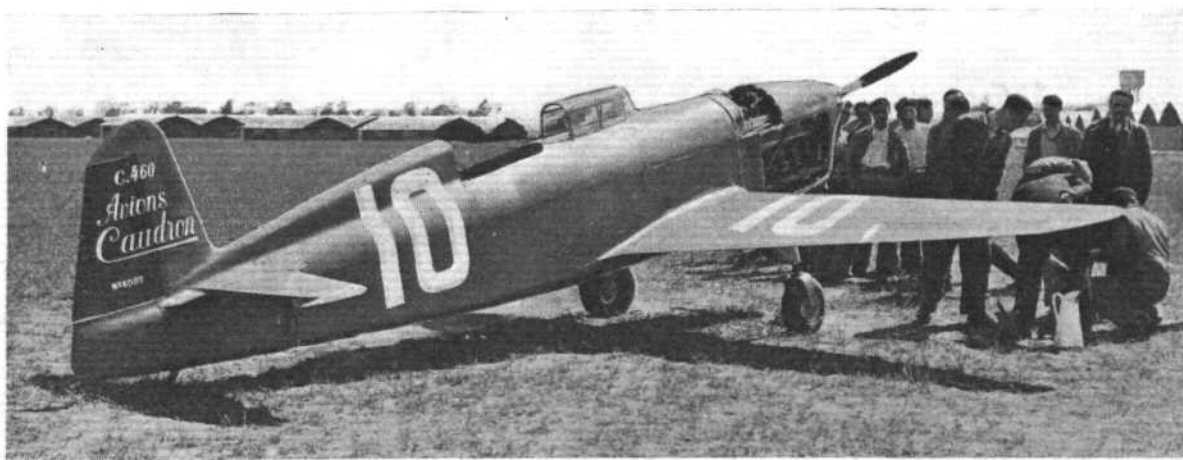
into two sections, each of 1,000 km. (621.37 miles). A compulsory stop of one hour will separate the two stages. For the first stage the competing machines will be started in accordance with their racing numbers, which were decided by drawing lots. In order to avoid crowding at the get away, there will be an interval of one or two minutes between the machines. The latter may be on the starting line with their engines running, and as the starting time taken will be the moment the official drops his flag, this is the time which will be used for the race. But for purposes of establishing records over the 100 or 1,000 km., the starting time which counts will be the moment a machine crosses the line in flight, and similarly the finish will be the moment the machine crosses the finishing line in flight. After crossing the line in the first flight, the competitor has 55 minutes in which to land, refuel and make any minor adjustments deemed necessary. Five minutes before his time to start, he must be on the line waiting for the second flight. If a competitor has not completed his refuelling operations, etc., in the 55 minutes at his disposal, any extra time spent at the aerodrome will count as flying time.

For the start on the second stage, each competitor except the last away will have his starting time delayed by an amount corresponding to the time interval between his start and that of the previous competitor in the first flight. This is done in order to make the placing equal to that which would have been obtained had all the machines started together on the first stage. At the finish the first man to cross the finishing line will be the winner of the Cup.

The control at Etampes-Mondésir will be considered closed for each competitor at the end of a period of eight hours from his starting time, plus the time spent in the compulsory wait between the two flights.

The crankshaft, cylinders and all parts affecting the cubic capacity of the engines must be stamped, and components so stamped may only be replaced by other components similarly stamped. No stamped component may be changed during the race. At the end of the race, the engines of the first three will be examined in order to verify that no unauthorised changes have been made.

Competing machines must be presented to the officials of the race before midday on the day before the race.



THE LATEST VERSION : The Caudron C.460 has a retractable undercarriage.

Air Transport & Commerce

FREIGHT BY AIR

A New London—Manchester Goods Service

A TRIAL goods service by aeroplane between London and Manchester was inaugurated on Wednesday, May 9th, by the firm of Bouts-Tillotson Transport, Ltd., in the presence of Sir Philip Sassoon, Under-Secretary for Air (who arrived at Hanworth in a "Puss Moth"), Col. Moore-Brabazon, and a number of other members of Parliament and distinguished persons. Two Airspeed "Couriers" were used for the flight from Hanworth, each loaded with about half a ton of goods, such as face creams, tomatoes, cucumbers, tinned sardines, fresh flowers, motor tyres, etc. On the return journey the machines were to bring newspapers, cotton goods, and a racing greyhound in charge of a kennel boy. The pilots engaged for the trial flight were Capt. Nash and Neville Stack. The day was murky, and the meteorological report told of thick weather ahead. However, both machines took off at 11.45.

Before the start, Sir Philip Sassoon made a little speech in which he said that Messrs. Bouts-Tillotson had felt, and rightly felt, the need for a long-distance service of freight by air. The flights on that day were a new step, and a valuable one. He congratulated the firm on their enterprise, wished them good fortune, and prophesied that they would achieve it.

The firm state that a number of their customers for



CHAPTER I : Sir Philip Sassoon (left) declares the new freight service open. In the centre is Mr. B. Brady, of Aircraft Exchange & Mart, and on the right Mr. Bouts, of Bouts-Tillotson Transport, Ltd. (FLIGHT Photo.)

road transport expressed a wish for a fast service for certain classes of goods, and so they decided to use aeroplanes. An official of the firm said that it was expected that a large development would be the despatch of samples from the North for the Continent. This would entail a link with Croydon, and it had not been decided to use Hanworth permanently. Likewise they had not yet engaged a permanent staff of pilots.

The ultimate object is to run a daily service in both directions between London and Belfast, with a stop at Manchester.



CHAPTER II : Loading up the two Airspeed "Couriers" at Hanworth before their journey to Manchester. (FLIGHT Photo.)

GERMAN AERIAL FREIGHT SERVICE

A NEW aerial freight transport service has been inaugurated by German Railways (Deutsche Reichsbahn) between Munich and Berlin. It is expected that the first of a number of Dornier Do-F freight carriers, which are being built for such services, will soon be put into operation. The Dornier Do-F was described in FLIGHT for February 22, 1934.

CHILEAN AIR LINE SUBSIDIES

A GRANT of one million pesos (£19,400) has been made by the Chilean Government to Líneas Aéreas Nacionales de Chile for the purchase of new flying equipment. At present the aircraft being used by the company are triple-engined Fords and Fairchild monoplanes. The company operates a thrice-weekly service between Santiago and Arica. The trip of 1,000 miles is accomplished in 1½ days.

PROGRESS AT HOME AND ABROAD



BUSY B.A.N.C.O. : Last Saturday the British Air Navigation Co.'s Tri-motor Ford, *Voyager*, was pressed into service between Heston and Jersey to transport an "overflow" load of nine passengers from the regular service. Here we see the passengers emplaning at Heston. (FLIGHT Photo.)

A CARDIFF-BRISTOL-BOURNEMOUTH SERVICE

A NEW service between Cardiff, Bristol and Bournemouth was inaugurated by Norman Edgar Western Airways, Ltd., last Sunday. The first machine, a "Dragon" piloted by C. R. Cubitt, left Bristol for Cardiff with the following passengers:—Lord Apsley, Mr. C. T. Culverwell, Mr. R. Bernays, Mr. N. Ker Lindsay, Capt. and Mrs. E. W. Gunston, and Mr. and Mrs. Norman Edgar. The "Dragon" was escorted by two Western Airways "Puss Moths," and the route flown was Bristol-Cardiff-Bristol-Bournemouth-Bristol. The regular twice-daily service commences to-day, May 17, and at Bournemouth connection is provided to Portsmouth, Brighton, Ryde, Shanklin, in co-operation with the Portsmouth, Southsea & Isle of Wight Aviation, Ltd., and for the Channel Islands by Messrs. Jersey Airways, Ltd. At the Cardiff end, the planes connect with the Railway Air Services route from Plymouth to Liverpool, via Birmingham, providing a very comprehensive link up.

IMPERIAL AIRWAYS AT WHITSUN

DURING the Whitsun period the ordinary time-tables of Imperial Airways will be suspended, and a series of special services will be in operation, including many holiday tours at inclusive rates. Six services a day will be flown between London and Paris; and operation on this route, in addition to the well-known "Heracles" type aircraft, will be new luxury airliners of the "Scylla" type. No passports will be needed by those who fly out to Paris or Le Touquet on Friday, Saturday, or Sunday, and return up to and including Tuesday. There will be a special Whit-Sunday day excursion to Le Touquet, the return fare of £3 15s., including tea, entrance to the Casino, and dinner in the air on the return flight to Croydon.

B.A.N.C.O.'S ACTIVITY

Nor only have the British Air Navigation Company been exceptionally busy during the past week with special charters, etc., but advance bookings for Whitsun—especially for the Le Touquet service—are already up to capacity mark. Portsmouth and Isle of Wight services continue to show increasing demand. Last Saturday the Jersey services were short of a machine, so the Banco Tri-motor Ford was loaned to take over nine passengers from Heston; a successful landing was accomplished on the beach at Jersey.

AIR MAILS TO SOUTH AMERICA

THE Postmaster-General announces that in consequence of changes in the air services in Germany it has been possible to extend the latest time of posting for the fortnightly air mail service to South America via Germany. Commencing with the despatch from London, on Friday, May 11, and on alternate Fridays thereafter, air mail letters will be despatched by this service if posted in the ordinary street boxes in London in time for the 5.30 p.m. collections in the head district areas, or the collections

made about 4 p.m. in the sub-district areas; they may also be posted up to 8 p.m. in the special blue air mail box at the General Post Office, King Edward Building, London, E.C.1, and about an hour earlier in the special air mail boxes in the London head district areas.

CHANGES IN VENEZUELA

LINEA AEROPOSTAL VENEZOLANA, a newly formed local company, will take over French air services in Venezuela. Few changes will be made and the aircraft and pilots which are at present in service will still be employed. It is expected, however, that three additional aircraft will shortly be ordered.

HIGH-SPEED GERMAN SERVICES

MAY DAY saw the inauguration of a series of high-speed air services intended primarily for the use of business men flying between Berlin and provincial towns. These services are flown at a speed of approximately 180 m.p.h. and are so timed that they allow a stay of about 4½ hours at their destination. The first towns to be served are Hamburg, Frankfurt-on-Main and Cologne. Heinkel H.E.70 (B.M.W.VI) machines are used. Also on May Day the Berlin-Warsaw service was opened. This should greatly strengthen the position of Berlin as an air line centre.

THE AIR-FRANCE DISASTER

UP to the time of going to press no traces have been found of the Wibault-Penhoet machine which disappeared between Le Tréport and the English coast on May 9. It appears certain, however, that the wreckage seen on the same day in the Channel was that of the missing machine, which was lost with six lives, and it can only be surmised that the machine flew into the sea under the conditions of bad visibility which prevailed at the time.

Lord Londonderry, Secretary of State for Air, has sent the following message of condolence to General V. L. E. Denain, the French Air Minister: "On behalf of the Air Council I wish to express our deep concern on learning of the loss of an Air-France liner. Please convey our sympathy to the relatives of those who lost their lives."

LUFT HANSA BUYS DOUGLAS AIR LINER

WE have previously announced that three Boeing 247 transport monoplanes (two Pratt & Whitney "Wasps") have been purchased by Deutsche Luft Hansa for experimental purposes. We now understand that the company has decided to purchase another American twin-engined monoplane, this time a Douglas D.C.-2 (two Wright "Cyclone" F's). The machine will be delivered this autumn. It is not yet known whether Germany will acquire the licence for this machine from the Fokker Company, which holds the agency for Douglas in Europe. Already Mr. Fokker has received orders for Douglas machines from France, Germany and Holland. It seems that Sweden also is a possible customer. Rumours are current that an important order from Switzerland may be forthcoming during 1935. At present Mr. Fokker is in Madrid.

REDUCE THE AIR MAIL RATES!

Cheap Postage Pays.

By REAR ADMIRAL SIR MURRAY F. SUETER, C.B., M.P.,

Chairman, Air Committee, House of Commons

THE future of this country as a civil air power may be assured to a considerable extent by nothing more nor less trifling than a postage stamp. This fact is so simple as to savour of the fantastic. But it is true—and there is not a civilian air expert with a full knowledge of figures and affairs who will deny it.

A reduction to a low flat rate of the air carriage of all letters between those parts of the Empire served by aircraft would revolutionise our air transport and, without any eventual loss to the Exchequer and Post Office—which in any event makes surpluses with monotonous regularity—confer enormous advantages on the industrial community and the Empire as a whole.

At the present moment air letter rates to India and South Africa and other parts of the Empire are both varied and heavy. They are fixed on a basis divorced altogether from the consideration of profit and loss on mail transport by other means, although it is well known that the carriage of a letter from, say, London to Ottawa for threehalfpence is made possible by the profit on the carriage, for the same rate, of a letter from one part of a city to another in an adjoining suburb. Air mails do not come within the scope of this "law of averages."

Present Traffic Insufficient

At the present moment civil aviation is fighting against severe handicaps. It draws the bulk of its financial support from subsidies, yet the amount of assured freight in both passengers and goods is insufficient to warrant any heavy outlay on new machine construction, new route planning, or the inauguration of faster and more frequent regular services. The Post Office itself, moreover, estimates that only 10 per cent. of the letter mails between this country and the Dominions and Colonies can stand any surcharge, however small, for accelerated delivery. This means that until air mail rates are reduced, civil aviation will only carry 250 tons of Empire letters a year—a none too encouraging outlook.

Despite these discouragements, however, civil aviation has worked wonders with the Empire routes. There are regular services to the Near East, India and South Africa; plans are far advanced for a service to Australia, while, pending the establishment of the inevitable transatlantic route, ship-cum-air services will reduce the letter-distance between this country and Canada to between three and four days. What has been achieved, however, is only the measure of what could be done if mail rates were cut and civil aviation given the assured freight by which alone it can accelerate its development.

History holds many precedents for the influence of concessions in small things. A trading charter to a private company to deal in furs opened up the whole of Western Canada. A more relevant instance is the introduction of the penny post by Hill in 1840. The step was attacked with as much ill-informed savagery as any comparable air-mail concession could be to-day. Yet it turned out to be the greatest impetus to the development of internal communication ever afforded, and established the prestige of the British Post Office throughout the world. Immediately before Hill's great step the number of letters handled by the Post Office was 80,000,000. The following year they rose to 170,000,000 and by 1870 the figure was 800,000,000.

Roland Hill's innovation required much greater courage than our authorities would need to-day if they wished to make such pleasant history repeat itself. It cost 4d. to send a letter from London to Hampstead and 1s. 5d. to dispatch a missive from Aberdeen to Dover. Hill cut it to one penny and revolutionised communication, transport and, in some degree, industry itself.

Cheap postage has always been a paying proposition. As long ago as the days of Elizabeth, the city companies did well by acting as couriers. When Charles I was King, Thomas Witherings reaped vast profits by operating a sketchy postal service at low rates. His charge for delivering a London letter on the borders of Scotland, for example, was only 8d., while Ireland could be tackled for 9d. But the prize for vindicating the principle of

cheapness must go to William Dockwra who, concentrating on London, established a penny post in 1690. He gave to all who could write and read a service which London has not enjoyed since. There were eight deliveries a day to residential districts and twelve to the commercial sections! It was so profitable that the system was taken over by the Government—and poor Dockwra, for some unaccountable reason, was fined.

Taking an example from British air history itself, those with long—or short—memories might be reminded that when the first regular air mail was established in 1919, between London and Paris, the charge was 2s. 6d. an ounce. This was, of course, prohibitive, but, when it was reduced after a few months, to the almost incredible sum of 2d., there were shoutings and protests from the Jeremiahs. Yet the reduction justified itself in a very short time, and it is not too much to say that directly and indirectly the popularity of the London-Paris route owed much to the initial impetus and publicity of its mail facilities. The vast air networks of to-day sprang from that trans-Channel service.

Quite apart from historic precedent, the plain facts of the present state of air development claim sympathetic consideration for the introduction of a low flat air-letter rate. The public has everything to gain and nothing to lose. Shipping companies could hardly raise serious objection. They are paid by the Post Office not by weight of the mails but by the space the mails occupy—which on Imperial routes is really very small compared with the space occupied by the heavy freight and parcels which they would still retain.

Nobody's Baby

If there is, indeed, any financial risk involved, the Post Office can well afford it. After all, it is there for the purpose not of making surpluses of many millions a year but of giving the public the best possible service at the lowest possible price. Yet in justice to this Department it may be said that the adjustment of the mail rates is not entirely its concern. The Treasury and the Air Ministry, as the Financier and Godfather respectively of civil aviation, must have a say in it too.

But they would also benefit by a reduction. The Treasury would see civil aviation on the way to independence; the Air Ministry would see an acceleration of the development of air routes and aircraft construction, as well as a huge advance in the air-mindedness of the people. And do not let us forget this: Civil aviation is becoming one of the most competitive of all fields of international activity. The air is the road and sea and rail of the future, and our very existence depends upon the assurance of our efficient control of our own flying destinies. No effort must be spared to encourage the expansion and regularity of our services, and by no means can that be accomplished more certainly than by providing profitable freight.

The Parliamentary Air Committee, of which I have the honour of being Chairman, has laid this matter of a flat rate for air mail letters before the Postmaster-General, and with his usual promptness he has promised me that the matter shall be looked into. It is to be hoped speedy decisions will be made. The case is clear; the cause is worthy; the need is urgent.

And what, moreover, of the air mail stamp? Although we are one of the pioneer air countries, we see many nations boasting this pleasant and profitable little luxury which we deny ourselves. They must make a revenue out of them or they would not be issued at all. If a profit, no matter how small, can be made by the introduction of an air stamp, the Postmaster-General is not keeping his great name for efficiency if he does not exploit this new avenue for raising revenue. Members of the staff of the G.P.O. themselves have informed me that their duties would be lightened by the introduction of air mail stamps, while the joy of philatelists goes without saying. This issue, however, is subordinate to the supremely important one of air mail charges as a whole.

Bring them down and the whole Empire will benefit!

Airport News

WALSALL MUNICIPAL AERODROME

Some 63½ Acres in extent, it is hoped to be completed by Whitsun

ON Tuesday, April 24, following the receipt by the Town Clerk of Walsall (Mr. H. Lee) of the formal approval of the Air Council to the establishment of a Civil Aerodrome on the Aldridge Road Site, which was purchased by the Walsall Corporation a year or two ago for the purpose, the official representative of the Air Ministry (Mr. W. A. Campbell), inspected the Aerodrome, including the site for the Hangar, Clubhouse and petrol pumps, the erection of which was approved by the Town Council a short while ago, and the sanction in respect of which has been received from the Ministry of Health.

There were present at the Inspection the Chairman of the Trade Development Committee (Councillor Cliff Tibbits), the Town Clerk (Mr. H. Lee), the Borough Surveyor (Mr. J. Taylor), Mr. E. A. Bayley, of Sussex (the Lessee), and his partner, Mr. C. Bilson, the Deputy-Borough Surveyor (Mr. Hughes), and Mr. J. B. James, of the Town Clerk's Department.

In the presence of the Inspector tests of the surface were made by means of a steam roller, two loaded motor lorries, and motor cars, in order to ascertain whether the ground passed the stringent conditions laid down by the Air Ministry. The Inspector expressed himself as well satisfied with the result of the tests, and the Town Clerk has received intimation from the Ministry that the issue

of a licence, to include flying instruction on light aeroplanes has been recommended.

The actual landing area is 63½ acres, and the maximum runway is 550 yards and the minimum 400 yards. Ample provision has been made for the parking of cars of members and visitors. The Hangar will be 90 ft. in length, 75-ft. span, and 14 ft. high (doors). Three petrol pumps will be installed (National Benzole, Shell-Mex, and Anglo-American). The Clubhouse will include office, 25 ft. by 20 ft., club-room, bar, attendants' quarters, etc.

The contractors for erecting the Hangar and Club-house (Messrs. T. Partridge & Co., Ltd., and Messrs. Deacon & Boardman), both of Walsall, are pushing forward with the work with all speed, and it is expected the Hangar will be completed before Whitsuntide.

A Company has been formed by Mr. E. A. Bayley under the title of "The Walsall Aircraft & Motors, Ltd.," and will commence operations, in conjunction with the Walsall Aero Club, within the course of the next week or so. The Company are commencing with three Planes, comprising a three-seater Cabin Plane to be used for Taxi work and Pleasure Flights, and two "Miles Hawk" Monoplanes. The latter are two-seaters, equipped with dual control for Instruction and Solo flying. It is anticipated that Sir Alan Cobham's "Flying Circus" will visit the new Aerodrome early in June.

HESTON

THE National Air Safety Committee demonstration at Heston, on May 10, already fully reported on page 493, went through according to plan in very favourable weather.

Mr. J. J. White, president of the Westchester Aviation Country Club, and Mr. Henri Ottinger, a former U.S. air-line pilot and flying instructor, landed at Heston on May 6 in one of the latest Waco cabin biplanes, which they shipped over from America. The Waco was taken ashore at Bremerhaven, whence they flew it across the Channel in very rough weather. Mr. White, who is also very well known in the business world, is shortly starting on a Continental tour with this machine.

During the week ending May 9, 81 passengers travelled between Heston and the Channel Islands by Jersey Airways, Ltd., and on May 11, Wrightson Air Hire were well booked. Mrs. Mollison has their "Leopard Moth" and Lady Young and Miss Warner have "Moths" on a day's hire.

Lady Young is the wife of the Governor-General of Northern Rhodesia, whose previous post was Nyasaland. She is an experienced pilot, and while in Nyasaland she founded a successful flying club, and was largely responsible for the activity in constructing aerodromes and providing facilities for flying in Nyasaland. She and her

family are regular travellers by air, and she purchased for her own use the "Gipsy Moth" in which Mr. Norman, early last year, made a tour of Africa on behalf of the Beit Railway Trust. Miss Warner is being taken by Capt. G. W. Ferguson, Navigational Instructor at Heston, on a long-range navigation lesson to St. Inglevert and back.

Dr. J. E. Thomson, who had some dual instruction at Heston last year, has returned to complete the training for his "A" licence. He was one of the founders of the Singapore Flying Club, which operates with seaplanes, on which he has done a certain amount of dual flying.

A new nineteen-year-old American pupil is Miss Cecile Hamilton, who had the first of a course of flying lessons last week. As soon as she has "taken her ticket" in England, she intends to travel on the Continent for four months. She is then returning to the States to take a two-years' ground engineering course at the New York University, before going in for flying as a career.

Baron H. d'Erlanger, brother-in-law of Mr. Roderick Denman, of Heston, made his first solo flight late on Thursday evening, after the finish of the Safety First Flying Demonstration.

In the first ten days of May, School flying hours show an increase of 164 per cent. upon the figures for the same period last year.

CROYDON

THE completion of 1,000,000 miles' flying by Capt. O. P. Jones is of considerable significance in commercial aviation. Amongst other things, it means that quite a large proportion of senior air line pilots must be nearing that figure. I do not know if any of the foreign pilots keep their logs in miles or kilometres, but it would be interesting to know the mileage of a man like Mr. Smirnoff, of K.L.M. I believe he flew most of the war in the Russian Air Force, and he was with the early S.N.E.T.A., which preceded the present Belgian S.A.B.E.N.A. Since joining K.L.M. in 1921, or maybe early 1922, he has flown with the greatest regularity, and, incidentally, senior K.L.M. pilots all do the 18,000-mile round trip Amsterdam-Batavia-Amsterdam four times a

year. O. P. Jones flew some 543 hours in the service, 611 with Sir Alan Cobham, 1,002 with Instone Air Lines and the rest with Imperial Airways, Ltd., except 18 miles which, somewhat unexpectedly, he has flown privately. What this mysterious 18-mile flight may have been, and why he did not go by car, is an intriguing mystery. However, as he has flown no less than 46 types, from "Heracles" down to power gliders, the 18 miles may have been accomplished on a glider from which the power plant had been removed. It has been estimated that he has crossed the Channel 4,500 times and has carried about 65,000 passengers. Jones is noted for his beard, his bull terriers and his beer mugs.

There is a fashion at the moment for little cardboard

name-plates indicating the destination of the machine about to depart. I saw the unfamiliar name "Ryde" recently. I do not know if Imperial Airways boldly remark "India" or "Africa" with these name-plates on the appropriate occasions. The K.L.M. 7 a.m. Thursday morning departure from Croydon, which connects with the Batavia line at Amsterdam, does not bear one of these labels, which is perhaps a pity. K.L.M. is conservative in small matters. Some form of flag at the prow has been adopted by Imperial Airways and Air-France for some time, but not by K.L.M.

A Swissair tri-motor Fokker made what is said to have been a record flight—but these things depend on tail winds and travelling unfrequented routes, very often—from Zurich to Croydon non-stop during the past week. The journey is one of some 600 miles, and was accomplished in 4 hr. 43 min. An ambulance patient was placed on board and the return journey, also non-stop, was done in 5 hr. The pilot was M. Hyffen-Rigger. Actually, one of the few benefits commercial aviation has conferred on mankind, against which I have heard no argument, is the boon of air travel for very serious cases of illness. For comfort and lack of disturbance, apart from the speed which often means the difference between life and death, there is no form of transport to touch air travel for invalids.

I was out on the tarmac at 7 p.m. on Monday evening. There was an Air-France "Golden Clipper," a K.L.M. "F.XII" and a Spartan Air Lines "Cruiser" scheduled to depart. The "Clipper" got away, but the other two had to wait for an incoming Sabena Fokker and another "Cruiser" to land. Spartan Air Lines pilots are very smartly uniformed. There is an indefinably naval air about them. They do not affect the Imperial Airways semi-military cut uniforms.

What I call a real air-taxi job was done here the other day. The son of the Aga Khan—Ali Khan—came in by Imperial Airways from Paris, and found an air-taxi—of Olley Air Service, I believe—ticking over on the tarmac

to take him to Chester, where he had a horse running. Incidentally, it lost, and so did several Airport people. The mere fact of an owner or a jockey passing through the Airport seems to constitute a red-hot tip for some people. Jockeys' tips are notoriously unlucky, and as most of the famous jockeys pass through at fairly regular intervals, quite a spot of money is dropped following their whispered advice.

Messrs. Wrightson & Pearse suddenly started a mystery crack-of-dawn service to Paris from here on Monday last. It is said to be a newspaper service.

Everybody at the Airport of London feels deep sympathy for Air-France over the loss of their machine with all hands in the Channel recently. Too much has already been written about it. The pilot was a well-known and well-liked figure amongst us, and we all feel deeply the loss of little Murphy the steward.

I always thought the most impressive sound on the telephone was to hear an engine running up on the tarmac at Paris or Amsterdam when sitting at Croydon at the end of a long-distance line. To-day I heard someone in a distant city turn and reproach his office boy—in the appropriate language—for opening a door just as a machine was taking off. I heard the rising roar as the door was opened, the reproach, and the sudden cutting off of the engine noise as the door shut with a distinct click.

Provincial Airways, Ltd., have maintained their twice-daily services to and from Plymouth with great regularity. Amongst passengers have been Lady Montague and Mr. Hofer, the American banker.

We carry strange freights on the air routes at times. I thought I had found a new one recently in the way of livestock, when I saw a headline in a newspaper of Socialistic outlook. It was "Air Octopus Surprise," but it referred to Railway Air Services, Ltd., opening another air route a little suddenly, and not to a giant squid loose in an air liner cabin.

A. VIATOR.

THE P.M.G. ON AIR MAILS

Sir Kingsley Wood's Speech at a Dinner held in connection with the International Air Post Exhibition

SPEAKING at the Dinner on May 9 at the Dorchester Hotel, in connection with the Air Post Exhibition just closed at the Horticultural Hall,

Sir Kingsley Wood said that whilst it was not the function of the Post Office itself to establish air services, it was the duty of his Department not only to be concerned in the development of civil aviation but to see to it that new services which could usefully be employed for mail conveyance were at once made available to the public. It was now the settled policy of the Post Office to use air services wherever practicable when regular flying could be assured and an appreciable saving of time could be secured for the postal user. They fully recognised that quick business communication meant much to our traders and business people, and particularly that a frequent and efficient air mail service could do much to promote further our Imperial connections. Our Empire air services were still in their infancy, but much had been accomplished. The direct air service to India was extended in December last to Singapore, and this service was accelerated by two days last month. It would be a great advance when the service was extended to Australia, as they expected it would be before the end of the year. It would not only complete the second of our main Empire air routes but would be the longest air mail service in the world. The England-South Africa air mail was accelerated last month by one day, and the mails were now due to reach Capetown nine days after leaving London.

Internal Lines

There had just been an interesting development, he continued. The present air mail services from this country had been concentrated on London, but a new service from Hull to Amsterdam was beginning in June, and he had arranged to use it experimentally for the conveyance of air correspondence for appropriate Continental destinations posted in Hull.

Moreover, the Post Office was not overlooking the recent development of air services within this country itself, and was not unmindful of the possibility of using them for the conveyance of mails as soon as these services became more or less settled.

The wider use of the air mail services had been greatly helped by the modern publicity methods they had recently adopted. Advertising in the National Press had helped to produce some remarkable results. The European letter air mail traffic had increased by 100 per cent. during the March quarter this year as compared with the corresponding quarter of 1933. Some 400,000 more air letters were sent from this country during the March quarter of this year than in the corresponding period twelve months ago—an overall increase of 54 per cent.

At the conclusion of his speech Sir Kingsley Wood had to face some criticism from several speakers—Mr. H. Lindsay Everard, M.P., pointing out that on the Continent air mails were operated throughout the night from all parts of Europe, and until we could fly our mails to Australia and to the whole of the British Dominions by day and night, we were scarcely making progress.

Exhibition Awards

It was announced that the first championships in connection with the International Air Post Exhibition at the Royal Horticultural Hall were won by the following:—

Grand Trophy.—John Aspinwall, Newburg, New York, U.S.A.

Ladies' Trophy.—Miss W. E. Penn-Gaskell, Great Britain.

Grand Gold Medal.—Dr. Philip G. Cole, New York.

Gold Medal.—Mrs. Anson McCleverty, Great Britain; Mr. P. H. Oakey, Great Britain.

C.I. ENGINE REACHES 28,000 Ft.

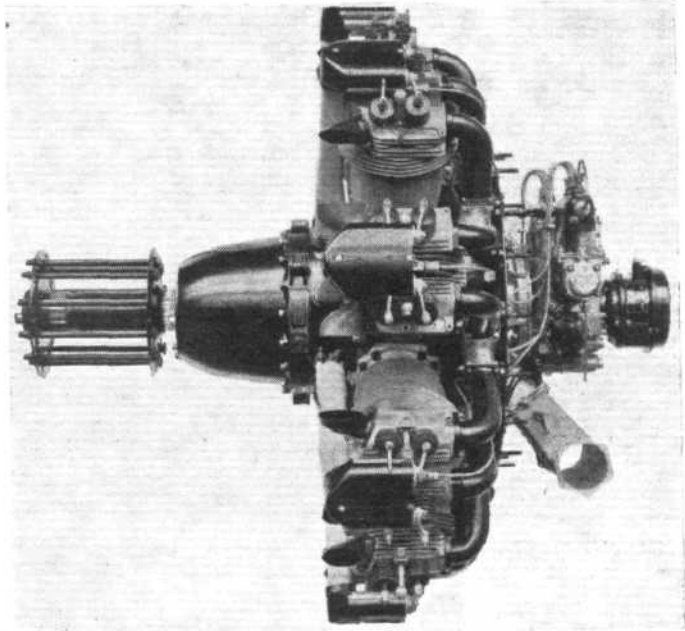
A Bristol "Phoenix" Engine in a Westland "Wapiti" has climbed to greater heights than any other compression-ignition heavy-oil engine in the world

ONCE more the Bristol and Westland companies have, between them, made aviation history. On Friday last Westland's test pilot, Mr. H. J. Penrose, took a Westland "Wapiti" fitted with Bristol "Phoenix" compression-ignition engine to an altitude somewhere near 28,000 ft. The two recording barographs have been handed over to the Royal Aero Club, whose representative, Capt. Winters, acted as official observer of the flight. In due course the barograph records will be submitted to the F.A.I. for official homologation. In the meantime it appears quite certain that the "record" for altitude with compression-ignition engines has been beaten by several thousand feet, and it is believed that the actual figure is close to 28,000 ft.

Mr. Penrose reported that the engine behaved perfectly throughout the flight, and that it maintained its power at height even better than had been expected of it, in spite of the fact that air temperatures as low as -40 deg. C. were encountered. At the greatest height reached there was little sign of any sudden failure to burn the fuel properly, although at the "ceiling" the density can only have been something like 40 per cent. of the ground level density.

The flight was undertaken as part of a development programme which the Bristol company has had in progress for some time in collaboration with the Westland Aircraft Works. The engine used was generally similar to the "Phoenix" which was demonstrated in public for the first time at the R.A.F. Display last year, but a moderate degree of supercharging has been introduced. This is the first time a British aero engine firm has supercharged a compression-ignition heavy-oil engine, and the success achieved promises well for the future development of this type of engine.

In his altitude flight Mr. Penrose used a "Wapiti" of the type supplied in such large numbers to the R.A.F. and other Air Services. It will be recollected that the two aeroplanes which flew over Mount Everest were of similar type, and were fitted with Bristol "Pegasus" engines. While testing one of these Mr. Penrose attained a height of 35,000 ft. The petrol engine was, however, fully super-



THE PROTOTYPE: The Bristol "Phoenix" engine from which the supercharged version used in the altitude flight has been developed.

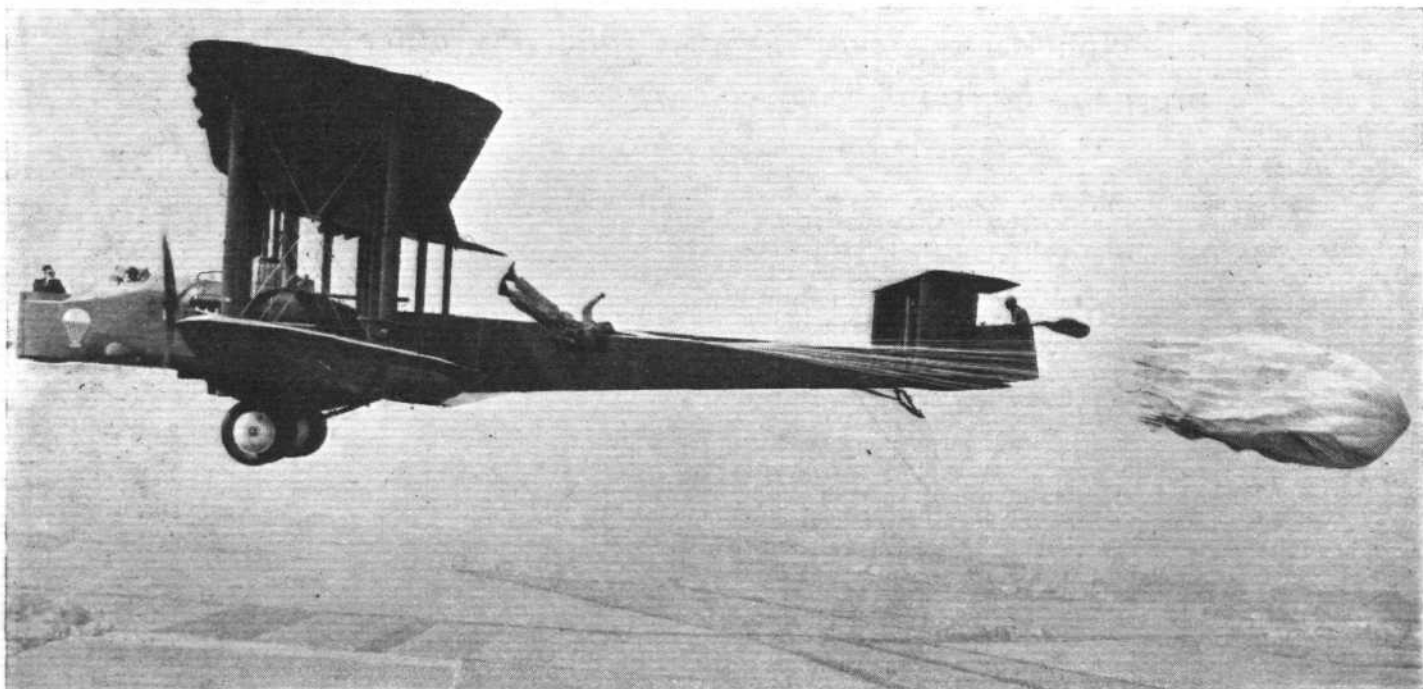
charged, while the latest "Phoenix" is, as already mentioned, only moderately supercharged.

In place of an observer, ballast was carried on the "record" flight. Special precautions had to be taken to avoid excessive cooling of the oil, and the tank was covered with felt. Needless to say, Mr. Penrose used oxygen apparatus, with electric heating to prevent moisture in the oxygen from freezing at the reducing valve.



ALTITUDE RECORD FOR GREAT BRITAIN: The Westland "Wapiti" (Bristol "Phoenix" compression-ignition engine), in which Mr. H. J. Penrose attained a height of nearly 28,000 ft.

Airisms from the Four Winds



HOOKED! There is a certain grotesquely helpless appearance about this aircraftsman as he is jerked off the wing of the Vickers "Virginia" during practice near Henlow.

Memorial to R. 101 Designer

A cot was dedicated last Saturday at the Connaught Hospital, Walthamstow, in memory of Lt. Col. Vincent Richmond, who lost his life in the disaster to the R.101.

Another Italian Record

An Italian machine has, it is claimed, reached a height of 24,600 ft. with a commercial load of 2 tons. The crew consisted of Flt. Com. Mauro and Sgt. Olivari.

The Royal Aeronautical Society

At its council last week the R.Ae.S. made the following elections:—President, Lt. Col. J. T. C. Moore-Brabazon, M.P.; Vice-Presidents, Sir John Siddeley and Mr. H. E. Wimperis. Among the awards, the Wakefield gold medal was given to Señor J. de la Cierva for his work on the development of the Autogiro.

An African Rally

On July 8 an Air Rally will be held at Lorenzo Marques, Portuguese East Africa. British pilots will be particularly welcome and will, in fact, be the guests of the Committee during their stay in the district. Furthermore, no fees will be necessary for them. Full details will be published in due course.

A C.30 Seaplane

A direct-control Autogiro is to be fitted with floats. The machine is being built by A. V. Roe & Co. to the order of the Air Ministry, and Short Brothers are to collaborate. Incidentally, the side-by-side cabin Autogiro (illustrated in *FLIGHT* of December 29, 1932), which has been built under licence by the Lioré et Olivier firm, and fitted with a Pobjoy "R" engine, is over at Hanworth, so that rumour has been particularly busy.

"Furies" for Toronto

Five Hawker "Furies," four officers and twelve men of the R.A.F., will sail for Canada about the beginning of June to represent the R.A.F. at the forthcoming celebrations at Toronto.

Miss Jean Batten

After leaving Lympne on May 8 for her third attempt to fly to Australia, Miss Batten had reached Karachi last Monday. A good start was spoilt by delay due to sandstorms and minor trouble between Baghdad and India.

England—Australia Race

The Royal Aero Club announces that the make and type of aircraft must be declared by the closing date of entries for the England-Australia Race (June 1), but that it is permissible to delay the supply of detailed information for a period of one month. In connection with the Handicap Race, an additional checking point has now been established at Jask.

Twenty-five Years Ago

From *FLIGHT* of May 15, 1909.

"The road vehicle and the ship both do their work with greater economy than is possible with a flying machine, hence there would be no point in using the air if the earth or the sea are available, unless an increased speed were thereby obtained."

The "Air Pilot"

As a new edition is in course of preparation, no further supplements are being issued of the *Air Pilot*. In the meantime amendments will be published at the beginning of each month in Notices to Airmen.

Aerial Artillery

It is learnt that a French aero engine has been "built around a 20-mm. quick-firing gun."

Another Airport for Manchester?

There is a rumour abroad in the North to the effect that Manchester Corporation has its eye on two new aerodrome sites, one near Audenshaw and another near Bury.

Queer Cargoes

A great many curiosities have rested in the mail compartment of the machines on the African Airway. There have been boxes of mosquitoes, crates of seaweed, divers' helmets, caviare, trout eggs, vaccines, and—yes—a consignment of bush ticks.

Seadromes Again

The U.S. Government has, it is reported, approved of the system of floating aerodromes, and, according to present plans, five of these will be anchored in positions on the Atlantic airway within the next few years.

Air Mail Proportions

A comparison between the number of letters sent by air mail and those sent by surface transport over the Empire routes is interesting. About 8 per cent. of the total are carried on the India-Malaya service, and about 5 per cent. on that to South Africa.

A Sikorsky Record

During recent test flights the Sikorsky S-42 flying boat (four P. & W. "Hornets") reached a height of 16,000 ft. with a load of 16,500 lb. (nearly 7 tons), thereby establishing an altitude record for its class. The take off for the record flight took 18 seconds.

Half Fares by Air

Provincial Airways, Ltd., of Croydon, announces that its fares will be reduced by half during next week, which, of course, includes Empire Air Day.

Soaring Record

On Monday, F/O. E. L. Mole set up a new British duration record for gliders by remaining aloft for 8 hr. 8 min. near Dunstable, improving the previous best by 46 minutes. F/O. Mole, incidentally, held the penultimate record, and came down voluntarily.

Another Atlantic Flight

Two pilots, Lt. Com. G. R. Pond and Lt. C. Sabelli, set off from Floyd Bennett Field, New York, in a Bellanca monoplane, on Monday, to make a non-stop flight to Rome. They were using direction-finding and receiving wireless. The machine carried 628 gallons of fuel, and the start was made with a good following wind.

Exhibition of Aerial Photography

An aerial photography and air survey exhibition will be held at Irving Hall, Bush House, A.dwyck, from June 4 to 9. This has been organised by Aerofilms, Ltd., on behalf of the air photographic companies and manufacturers of cameras and photographic apparatus. It will consist of a comprehensive review of air photography, and its main object is the stimulation of greater interest in this work. Aircraft firms, the Air Ministry, the War Office, the Royal Aeronautical Society, the Science Museum, and other similar bodies will supply exhibits.

Ordnance Survey by Air

Proposals for the rapid revision of the Ordnance Survey Plans by aerial photography have been approved. Definite limits for the delivery of these plans are set by the Town Planning Act; in many cases less than two years remain for their completion and the Ordnance Survey has promised its co-operation if local authorities will make their revisions with the aid of air survey. In this event the whole sixteen million acres of town planning areas in England and Wales could be covered in two years. Specimen photographs have already been taken. One of these, reproduced as a transparency to the same scale as an Ordnance Survey Plan only four years old, revealed that a surprising amount of building and road construction had taken place during the four years.

Irish Enterprise

Parcels for London, Berlin and Paris were taken by air from Cobh, Cork, after the Atlantic crossing of the U.S. liner *Manhattan*. The experiment was organised by the Cork Aero Club.

U.S. Flight to Russia

An American pilot, W. H. Alexander, plans to make a transatlantic flight this summer by way of the Azores. He will fly a landplane with a crew of three, and will carry a 4,000-lb. payload of goods to Russia.

A New Method of Control?

From a well-known daily paper and from, ostensibly, the pen of an equally well-known pilot—"... the joystick ... is connected to ... the elevators, the ailerons, and the rudder."

Elli Beinhorn for America

Elli Beinhorn, the German airwoman, is shortly to make an aerial tour through Central and Southern America. She will start from Panama flying a Klemm Ki-32 fitted with a Siemens Sh.-14A engine of 150 h.p.



ANGLICISED: One of the machines brought over by the week-end party, a Heinkel "Kadett," has a distinctly "English" look.

Comparative Figures

It is interesting to note that since 1931 the number of French private aeroplanes has increased from 366 to 602, whereas our own have remained practically constant, increasing from 385 to 408. The French owner has, of course, been actively encouraged during the last year or two.

A 1,200-h.p. Diesel

Produced by D. J. Deschamps, an engineer of the Lambert Engine & Machine Co., Moline, U.S.A., a new two-cycle Diesel aero engine, of twelve cylinder inverted "V" type, develops 1,200 h.p. at 1,600 r.p.m., with a compression ratio of 16 to 1. The dry weight of the engine in running order, complete with all accessories, is about 2,400 lb., and this gives a weight of 2 lb. per h.p. The first experimental engine was reversible, and was designed for use in airships as well as heavier-than-air craft. If the reversible engine were used in an aeroplane, the airscrew could be used as a brake to shorten the landing run.

Endeavour's Trials

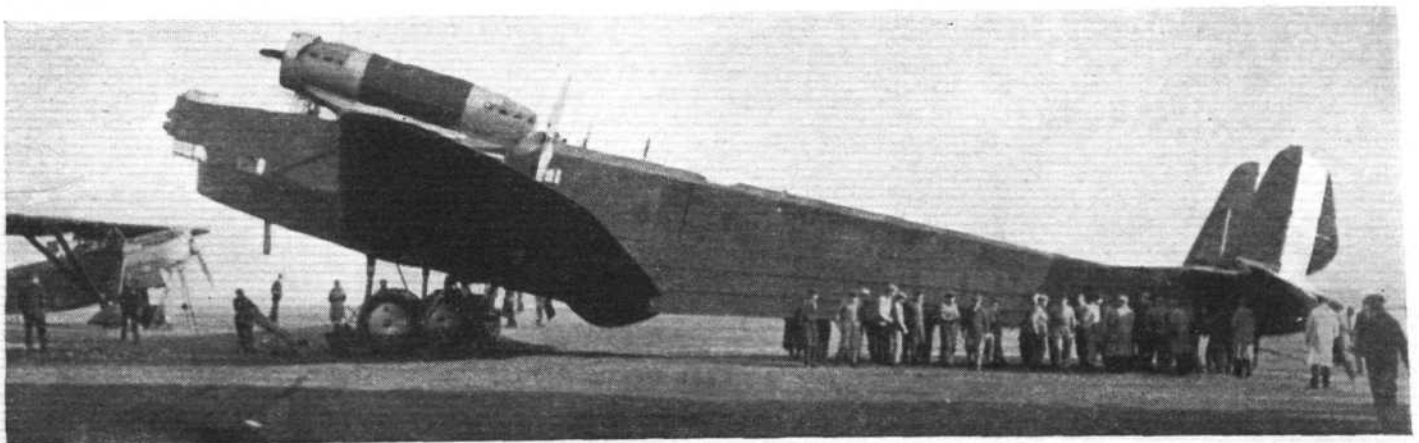
With a steady breeze from the south-west, and with Mr. Sopwith at the helm, the America Cup challenger left Gosport on May 8 for her maiden trip.

Accident to Florinne Helicopter

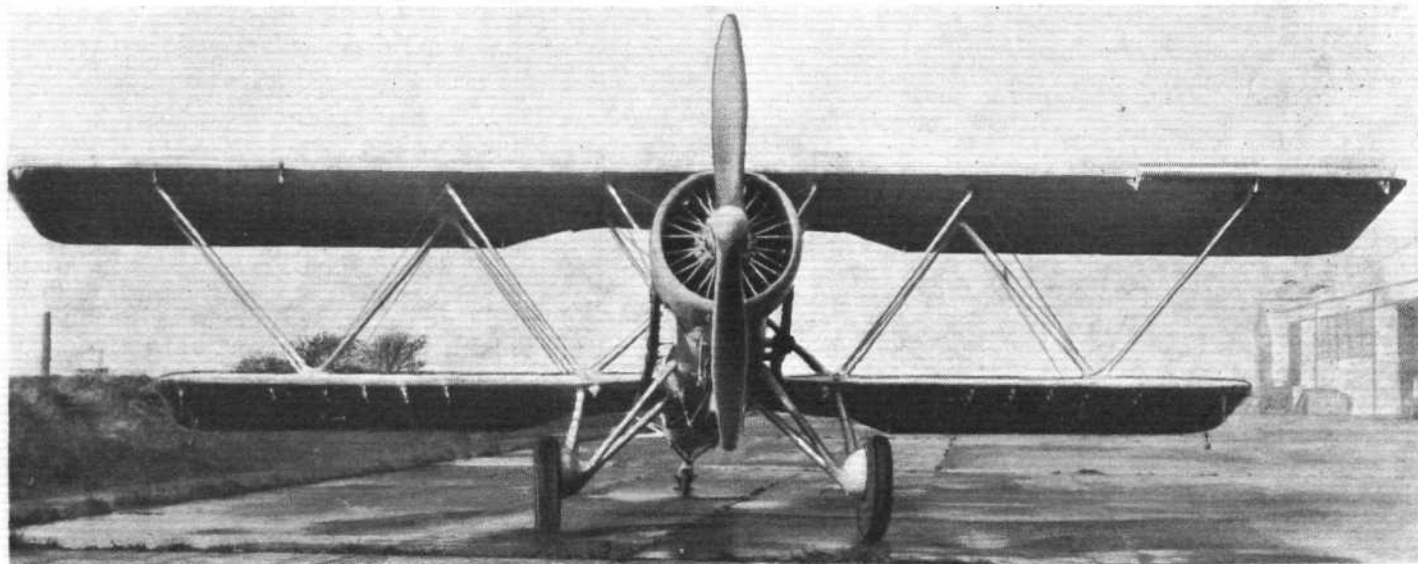
While making a test flight over Evere Aerodrome, Brussels, on May 4, the Florinne helicopter crashed. The cause of the accident was the failure of the clutch of one of the two rotors. It crashed from about 25 ft. on to its rear end.

British Entries for Alpine Flight

Some of the British entrants for the Austrian Alpine Flight this Whitsun are as follows:—Mr. W. Lindsay Everard, M.P., Mr. and Mrs. C. W. Phillipps, Mr. and Mrs. A. L. Preston, Mr. P. Q. Reiss and Mme. Elieva, Mr. G. H. Wilson-Fox with his mother, Mr. P. J. Symington with Mr. T. W. H. Hazcock, Mr. and Mrs. M. A. Mickletwait, Mr. A. T. Richardson, and possibly Air-Vice-Marshal Borton.



THE POTEZ 41: The top speed of this all-metal machine is 198 m.p.h. at 13,000 ft., and it is claimed, with its four 850 h.p. Hispano-Suiza engines, to be the most powerful bombing machine in France.



THE BLACKBURN T.S.R.

Bristol "Pegasus" 9 cylinder or Siddeley "Tiger" 14 cylinder engine available.

DESIGNED for work such as torpedo-dropping, Fleet spotting, and Fleet reconnaissance, the new Blackburn B.6 is an unequal-span biplane with folding wings. A twin-float undercarriage can be substituted for the wheels, and the machine operated as a seaplane. When used as a landplane the machine is fitted with wheel brakes and a tracking tail wheel to facilitate

ground handling. The fuselage is of metal *monocoque* construction, and is designed to accommodate a crew of two or three, according to the military duties undertaken. The power plant may be either a Bristol "Pegasus" or a Siddeley "Tiger." The machine has been tested with both types. The photographs show the "Tiger" version. An unusual feature is the wing bracing.



From the Clubs

Events and Work at the Clubs and Schools

SCOTTISH

Two first solos were made during the week at Renfrew, and one member obtained his licence. Flying time totalled 37 hr. 40 min. London, Scottish & Provincial Airways have been carrying out experimental flights from London.

YORKSHIRE

Approximately 20 hours have been flown at Yeadon during this week, and four new members have joined the Club. Visiting machines included a Dutch "Moth" piloted by Mr. F. Ten Bos, who remained for three days.

HANWORTH

Out of the sixteen "dawn patrollers" from Reading, Brooklands, and Southampton, only three came through to a free breakfast, so the defenders must be learning all there is to learn! Forty-six hours were flown on Club machines during the week, with cross-countries to Liverpool and Southampton. Lord Sempill, who has been carrying out a lecture tour in Sweden and Denmark, returned in his "Puss Moth" on Monday evening, May 7.

NORTHAMPTONSHIRE

Four new members started instruction at Sywell last week, and two qualified for their "A" licences. On Wednesday the Club was honoured with a visit from the Lord Mayor and Lady Mayoress, the Town Clerk, and the City Surveyor of Stoke-on-Trent. They were very impressed by the aerodrome layout, and thought that the club building was the very thing to erect at their own municipal airport. The Lady Mayoress took the air for the first time with Flt. Lt. Rose.

NORFOLK AND NORWICH

The flight to Switzerland passed off without incident, though quite a lot of bad weather was encountered, both here and abroad. M. R. Le Coultre was duly dropped at Basle, and Mr. J. Collier brought the "Moth" back to Norwich after a night's delay at Dijon, where he saw, of all things, a Sow with "Salamander" in the hangar!

Save for Tuesday, when rain fell heavily, flying has been fairly continuous during the week, and visitors have arrived by air in a more or less constant stream. Among them was Mrs. Patterson, the "aerial commercial traveller," who was, incidentally, the first lady to obtain an instructor's licence.

The Club will be open during the holidays, but closed on the following Tuesday and Wednesday, so that the staff may have their rest.

HERTS AND ESSEX

The second "Wrighton" Challenge Cup competition was flown on Sunday, May 6, in a wind which rose at times almost to gale force. The twelve entries, however, flew the triangular "pin-pointing" course in good time, and the three leaders were K. J. Lindy (inevitably!), G. H. L. Curtiss, and E. L. Gay. The cup presented by Mr. and Mrs. J. A. Mollison is now on view in the clubhouse, and the aerobatic competition involved will be held in July, while the "Shelmerdine" Cup competition will be flown this month.

Sixty-five hours were flown during the week, including a first solo, and among the new members are visitors from Norway and France. There will be a much improved approach from the north-east when the alterations, which include an addition of five acres to the aerodrome, are completed. Another "Moth" has been added to the fleet and the question of type variety is under serious consideration.



HOSPITALITY: The German pilots who were entertained during last week-end by the Royal Aero Club.

MIDLAND

Flying during the week totalled 48 hr. 55 min. and included a visit to the new Walsall aerodrome.

CAMBRIDGE

Two pupils of Marshall's Flying School obtained their licences last week, during which 41 hr. 30 min. were flown. Cross-country and taxi flights were made to Ipswich, Petersfield, Salisbury, Chester and Ripon.

HAMPSHIRE

Something like a record was made last week by Mr. R. P. G. Owen, who, after joining the Hampshire Club on May 9, made his first solo on the 11th, and qualified for his licence on the 13th! Two first solos were included in the week's total of 83 hr. 30 min.

CARDIFF

Thirty machines visited Cardiff during the week, not including the Railway Air Services' "Dragon," and the Cardiff Aeroplane Club flew 27 hr. 10 min. dual and solo. Capt. H. Leighton Davies, J.P., and Alderman Sir Charles H. Bird, J.P., have consented to become Vice-Presidents.

BROOKLANDS

Apart from a high wind on Saturday and Sunday, the weather has been excellent, and 85 hr. 30 min. flying was completed. One of the new members, Mr. Boyd, was, until recently, in the Navy, and is learning to fly on a machine which he has purchased from our second-hand stock. Another member is taking a blind-flying course. On Sunday about forty people from the Pyrene Fire Extinguisher Co. paid us a visit, and, after looking round the place, were given tea, many of them having joyrides in either the School machines or a "Leopard Moth."

HATFIELD

Another instructor has now joined the staff of the London Aeroplane Club, Flt. Lt. Selby-Lowndes, and yet another "Tiger Moth" will soon be added to the fleet—both explaining or explained by the week's flying time, which totalled 91 hr. 15 min. Four new members have joined and two members carried out their first solos. Mr. Mollison's "Dragon" has been sold to Mr. Len Reid, who is, incidentally, Mr. A. S. Butler's brother-in-law. The swimming pool is now heated, and the hard courts should be ready in less than a month's time; 19 hr. 25 min. were flown by the R.A.F. Flying Club members.

CINQUE PORTS

Messrs. Brown, Webb and Fellows have purchased a "Moth" which will be available for club hire, so there are now five training machines at Lympne. Mr. G. Fellows has joined the staff as assistant to Mr. W. E. Davis. Flying time during the week totalled 21 hours, with one new "A" licence. Several members propose to go over to the Whitsun meeting at Eelde.

SOUTHERN

During the first fortnight in May 36 hours were flown and the "Fox Moth" has been in great demand for taxi work. One cross-country to Portsmouth by two club machines was "befogged" there, and at Tangmere on the way back. Mr. John Trantum, who is making a "drop" at the display on May 26, has arranged to renew his licence at Shoreham.

EGYPT

Mr. D. Carroll, the Chief Instructor of the Mizr Airwork School, is completing plans for the flight to Turkey in School machines, which is due to leave Cairo during the early part of June. Three machines are to take part in the flight, which covers some 2,750 miles, and five pupils intend to make the journey. Such long cross-country flights offer valuable experience.

LIVERPOOL

High winds still trouble the embryo (and other) pilots at Hooton Park, but 31 hr. 20 min. were flown last week.

COVENTRY

The Coventry Aviation Group now operates at Whitely aerodrome by permission of the Sir W. G. Armstrong Whitworth Aircraft Co., and the address of the Secretary, Mr. H. T. Jackson, is 61, Huntingdon Road, Coventry. The last meeting was on May 10, with Maj. J. E. Bonniksen, of Leamington, instructing.

INDIA

Apart from the fact that no fewer than 10,819 hours were flown during last year by the nine clubs, some interesting points can be gleaned from the annual report of the Aero Club of India & Burma, Ltd. For instance, a census shows that the average amount of dual control necessary for Europeans and Indians was 13 hr. 59 min. and 21 hr. 19 min. respectively. The Delhi Club now has an Indian instructor, Mr. Bhagat B. Lal, who succeeded Capt. Riley, and was the first Indian to be granted a "B" licence. Two "Monospars" are owned by the Jodhpur Club, which owes so much to the enthusiasm of the Maharajah. Fourteen "B" licence pilots have been trained in India.

TEUTONIC TOURISTS

German Pilots Entertained in England by the Royal Aero Club

14196



The visiting machines on the tarmac at Heston. (FLIGHT Photo.)

IN return for hospitality received in the past by British pilots visiting Germany, the Hospitality Committee of the Royal Aero Club entertained, on Saturday last, a party of German pilots who had flown over to Heston. This party consisted of Flieger Commodore Loerzer, Flieger Kapitän Bieber, Staasterat Florian, Flieger Schwarmführer Wegenast, Flieger Kommandant von Bulow, Flieger Kommandant Homburg, Flieger Kommandant Laumann, Herr Bruegmann, and Herr Scholz.

After being entertained at a luncheon at Heston, presided over by Mrs. Nigel Norman, the party flew to Mr. Lindsay Everard's aerodrome at Ratcliffe, escorted by *The Leicestershire Vixen*. During the week-end visits were made to the homes of Lord Willoughby de Broke and Maj. Shaw. On Monday evening the tourists were entertained to a dinner at the House of Commons, and those still remaining behind lunched with Mr. Gordon Selfridge, Junr., on Tuesday. Altogether a very full itinerary.

The machines flown by the visitors were of particular interest, and a striking point was that they were all biplanes. They were, in fact, three Focke-Wulf "Stieglitz" and two Heinkel "Kadetts." The sudden appearance of crops of German light biplanes is not, it is suggested, quite without significance. For the most part these are in the class of our "Tiger Moth"—in other

words, they are manoeuvrable two-seaters which may be used for training or for aerobatics, and possess more of the characteristics of high-powered military aircraft than the larger and heavier cantilever monoplanes of similar power which have been in vogue in Germany for some years past.

The three Focke-Wulfs were similar in design, being standard "Stieglitz" biplanes. The "Stieglitz" is a biplane of equal span with heavily staggered wings, for which wooden construction is largely used, while the fuselage is a welded steel tube structure. A distinctly neat undercarriage of the divided type is fitted, and in this the shock absorbers and radius rods are enclosed in a common fairing. With 150-h.p. Siemens Sh.14a engines the top speed is 125 m.p.h., cruising speed 115 m.p.h., landing speed 42 m.p.h., initial rate of climb 1,004 ft./min., and service ceiling 16,730 ft.

Of the two Heinkel He.72 "Kadetts" brought over, one was fitted with the same type of engine, and the other with an Argus A.S.8R. inverted air-cooled type of 135 h.p. As in the case of the "Stieglitz," the "Kadett" is a staggered biplane of equal span. With the Siemens engine its top speed is 115 m.p.h., cruising speed 97 m.p.h., and landing speed 48 m.p.h., and with the Argus the top speed is 112 m.p.h. and cruising speed 93 m.p.h. The range is about 400 miles.

SAFETY IN THE AIR

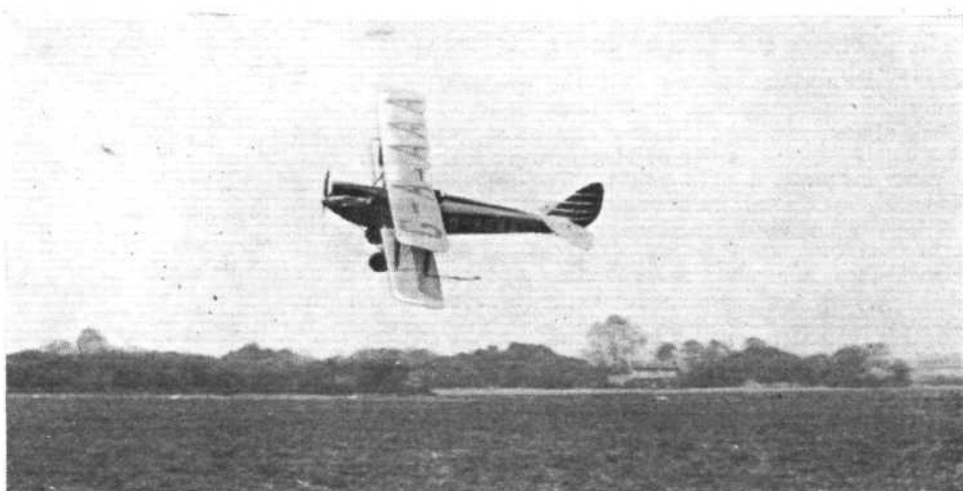
A report of a demonstration organised by the National "Safety First" Association, Inc. in collaboration with the Air League of the British Empire

IN connection with the National Safety Congress, which was held from May 9-11 in London, the National Air Safety Congress Committee and the Air League of the British Empire, through the courtesy of Airwork, Ltd., organised a demonstration of air safety at Heston Airport on Thursday, last. A large number of delegates to the Conference and several Chief Constables were present. Mr. Ivor McClure, chairman of the Aviation Section of the Association, broadcast an excellent commentary on the demonstration. He explained that it had been restricted to simple illustrations of some of the first principles of normal flying. Any element of entertainment had been eliminated.

Mr. McClure pointed out that the Air Navigation (Consolidation) Order of 1923 and its amendments imposed certain duties upon the constabulary either directly or by implication. Although constables are familiar with road vehicles and, in consequence, should make competent witnesses in cases involving contravention of the Road Act, few of them have opportunities of acquiring the same degree of knowledge of aircraft. If a constable is not conversant with the elementary facts of flying, he might be at a disadvantage when called upon to decide whether or not an offence under the Air Navigation Act had been committed.

Maj. L. H. Thornton, the President of the Liverpool Aero Club, last year organised a lecture and demonstration by the Club for the benefit of the Liverpool Police Force. A syllabus of this lecture and a programme of demonstration were communicated to the National Air Safety Committee of the N.S.F.A., which realised the benefits which might be derived by the police force if the experiment were repeated in other parts of the country by co-operation of the Chief Constable and local aeroplane clubs. The demonstration at Heston was a condensed version of the Liverpool Aero Club's programme.

Three aircraft took part—a "Puss Moth," lent by Standard Telephones & Cables and flown by Mr. Samuelson, a "Moth" belonging to Capt. Lamplugh, who is a member of the National Air Safety Committee, and G-AAAA, or, as its owner, Mr. McClure, calls it, "four A's," the first machine in the "A" series. This latter machine was flown by Capt. Rex Stocken, also a member of the National Air Safety Committee. First a demonstration was given of how aircraft differ in their behaviour during take-off according to the load they carry. During this demonstration the visitors saw in operation the con-



CAN I LAND HERE? The machine is banking low in order to see if the ground is suitable for landing. (FLIGHT Photo.)

trol system whereby a signal is given by an Aldis lamp to the pilot before taking off. "Four A's," carrying hardly any load, took off first. Next the second "Moth," having an engine of the same power as "four A's," but carrying a load equivalent to pilot, passenger and luggage, took off. The effect of the extra load on the take-off and rate of climb was easily seen. The "Puss Moth" took off with a load equivalent to pilot, two passengers and luggage and crossed the aerodrome boundary at a lower height than the other aircraft. Both the "Gipsy Moths" then gave a demonstration of how a machine stalls when climbing too steeply.

A height-judging competition was the next item on the programme. The three aircraft flew at various altitudes and distances from the crowd, members of which were asked to write their estimation of these on cards. Mr. Samuelson, in the "Puss Moth," then showed how far a machine will glide after the engine has been cut out or has failed. The "Puss Moth," of course, has an exceptionally flat gliding angle, and instead of barely reaching the aerodrome, Mr. Samuelson had apparent difficulty in losing the necessary height.

Capt. Stocken, in the "Gipsy Moth," gave his well-known imitation of a young man paying a visit to the home of a desirable young lady, whom he is anxious to impress with his daring. There are, we think, few young men who could impress a young lady by "showing off" in an aeroplane quite so well as Capt. Stocken. The commentator explained that emergencies occasionally arise when pilots must carry out evolutions which the layman might mistake for "showing off." When making a forced landing in a strange field, for example, it is desirable to find out the nature of the surface of the ground. Capt. Stocken demonstrated this by flying the "Moth" between ten and twenty feet above the ground and banking slightly the better to see the nature of the ground.

Although no part of the actual demonstration, the next event greatly impressed the visitors. Capt. V. H. Baker, the chief instructor at Heston, gave a demonstration of crazy flying in an Avro "Club Cadet" ("Genet Major"). His exhibition was one of the finest of its kind that we have seen.

A FLAT TURN: A "Moth" shows how not to turn near an enclosure. (FLIGHT Photo.)



Correspondence

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

SPEED OF COMMERCIAL AIRCRAFT

[2923] It appears to me that the question of whether really fast passenger machines can be used successfully rests, almost entirely, on the one point which was not mentioned in your leader of May 3rd.

With multiple engines and modern organisation, safety between airports can be a *sine qua non*, and no one would say that the modern American machine was uncomfortable. A high landing speed is not dangerous in itself now that wheelbrakes are standardised, for a machine can be safely braked or manoeuvred once it is firmly on the ground.

Gliding angle is surely the crux of the matter. The "cleaner" a machine, the more desperately flat is its approach, and the conveniently placed airport must, almost inevitably, be surrounded by houses or even taller buildings. Even a private cabin machine gives the amateur something to think about when approaching a smaller municipal airport on a calm day, and he usually finds it necessary to "swish-tail" as he comes over the fence—to the horror of his passengers.

Until either flaps or air-brakes can be fitted to leave control undisturbed, the pilot of the really fast commercial machine will come in on his engines, almost at stalling point.

London.

May 3, 1934.

AMATEUR PILOT.

FROM AN AUSTRALIAN VISITOR

[2924] Before I leave your hospitable shores, after a two months' tour of investigation on behalf of the aviation industry of Australia, may I publicly offer thanks, as I have already done personally on many occasions, for the kindness I have received in Great Britain, and, may I say also throughout the many countries of the Continent I have visited during my stay in Europe?

Wherever I have gone I have met with the greatest consideration, and as well as giving me all the information I could possibly expect—and assimilate!—your aircraft manufacturers have been most interested in what I could tell them of conditions in Australia.

Your conditions, the conditions of Europe generally, are very different from the conditions we enjoy in Australia. Your weather—I have the highest admiration for your pilots who have to fly in all weathers—is different; your distances are different; passport and Customs conditions are different.

But air transport can be made to fit all circumstances, and your small country with its huge population will find it as valuable as does my vast country with its sparse population.

Air transport, I am convinced, is the transport of the future, and Great Britain already recognises it. When next I visit London—it is fifteen years since I was last here—I hope that every big town will have its municipal aerodrome, as the big towns of Australia already have, and that the number of private aviators will have multiplied exceedingly.

I carry back with me the happiest recollections of my stay in England, and I thank all who have made it so enjoyable.

F. W. HAIG,

Chief Aviation Officer,

Vacuum Oil Company of Australia.

Caxton House East, Westminster,

London, S.W.1.

May 2, 1934.

FREE INSTRUCTION

[2925] With reference to the paragraph published in FLIGHT of April 26th, under your heading "The Industry," I am not at all sure that "Free Instruction" as offered by Messrs. Henlys, Ltd., if adopted by the retail departments of aviation companies as an aid to sales, would

ultimately prove to be of advantage in the interests of the industry generally, and private flying in particular.

For a number of years it has unfortunately been the accepted practice in the motor trade to offer free tuition to purchasers of cars. This, in my opinion, is a deplorable form of price cutting, the result of which, I am convinced, is reflected in the enormous number of motoring accidents at the present time, due to the fact that too often a novice is turned loose amongst his fellow motorists after only two, three or four lessons, and with merely the vaguest idea of driving, and any bad habits formed at this stage, instead of being promptly eradicated, usually become firmly rooted. Thus is he started off badly, and seldom does he seek to procure further or advanced tuition. Consequently he carries on in ignorance of his shortcomings, and in many cases the fact that he is really a danger on the road.

I trust that aviation interests will profit by the mistakes of others, reduce the cost of aviation instruction to as low an economic figure as circumstances will allow, and in this way encourage new pupils, but that offer "something for nothing," if indulged in, may ultimately lead to lamentation and regret.

ALBERT BRAID,
F.I.M.T.

Colwyn Bay,

Denbigh, Wales.

May 9, 1934.

REDUCE THE AIR FREIGHT RATES!

[2926] Considerable discussion is now being devoted to the question of the possibility of a reduction to a low flat rate of the cost of transporting Imperial letters by air. This cause might be of still greater purpose if it were extended to include a reduction in the abnormal freight charges on perishable goods.

Within the Empire there are commodities for which either only a small market, or in some cases no market at all, can be found owing to the absence of a sufficiently speedy means of transport. With aviation as advanced as it is to-day, such a difficulty should not exist. Transport by air of perishable goods can only be a commercial proposition if goods so carried can be placed on the market at competitive prices. The introduction of frequent and regular air services within the Empire and in neighbouring countries should in a very short time achieve this end.

When railways first revolutionised the old existing method of travel, expense almost prohibited the sending of "goods" by this fast and novel means of transport. It was confined to carrying only those few passengers who could afford (and who had the courage) to make a journey in so "unconventional a carriage." One development succeeded another, and to-day goods train and passenger train travel side by side, the former having become the main supporting pillar of our internal industrial life.

How long shall we hesitate before we allow the nation's "baggage" access to the most progressive discovery of our time?

K. B. HARE-SCOTT.

Knightsbridge, London, S.W.3.

May 9, 1934.

Points from Letters

ROUGH-WEATHER FLYING

[2927] That what he is "supposed" to have told a reporter at Hatfield concerning the terrific weather, and the cancelling of the air line services, is pure imagination on the part of the reporter, is the gist of a letter from Mr. V. G. Parker, of Brookmans Park, who is prompted to write to FLIGHT because of the reference in "Croydon Notes" last week. The weather was, he states, certainly rough from Croydon to Hatfield, but very good from France to Croydon. Mr. Parker states that he would not be foolish enough to bring a "Moth" through weather which had caused the regular air services to be cancelled.

COMFORTABLE SPEED

The "Beechcraft," manufactured by the Beech Aircraft Co., of Wichita, Kansas

THE design of high-speed single-engined aircraft in the United States has become stereotyped. Low cantilever wings, monocoque fuselages, retractable or cantilever undercarriages and radial engines with low drag cowling are prevalent. The design of the "Beechcraft" is refreshing, and apparently the machine loses nothing in the way of performance over the more conventional types. It can maintain a cruising speed of 170-180 m.p.h. for from 900 to 1,000 miles. To make this long range practicable great comfort is necessary. The cabin is roomy; a large man may stretch his legs as far as he wishes, and has ample elbow and shoulder room. As the result of thorough sound proofing, conversation is easy. Either hot or cold air may be admitted to the cabin without opening the windows. In order that the front seats may be large and roomy and still be accessible, the right-hand seat is on slides and may be pushed back out of the way when passengers are entering the front seats.

Stopping that "Sinking Feeling"

One objection against high-speed flying often made by passengers is that when flying through rough air the feeling is much the same as that when riding in a high-speed motor-boat on rough water. As a result of experiments, a new type of passenger seat has been developed for the "Beechcraft." The two individual rear seats are suspended in such a manner that they float on rubber and their movement is controlled by a double-acting hydraulic shock absorber which eliminates all jarring experienced while flying at high speed in rough air.

Another problem to be contended with in the design of high-speed aircraft is that of vision. In many of the conventional low-wing monoplanes downward vision is distinctly poor. The negative stagger on the "Beechcraft" makes it possible to seat the pilots so that they may see back over the top wing while turning and have an excellent view downwards. In bad weather the windows beside

THE "BEECHCRAFT"

Performance with full load at sea level

	Model 17R	Model 17J
Top speed	200 m.p.h.	235 m.p.h.
Cruising speed (87 per cent. full r.p.m.)	170 m.p.h.	200 m.p.h.
Landing speed	60 m.p.h.	62 m.p.h.
Cruising range	1,000 miles	750 miles
Rate of climb	1,500 ft./min.	2,300 ft./min.
Service ceiling	20,000 ft.	27,000 ft.
Span	34 ft. 4 in.	34 ft. 4 in.
Length	24 ft. 2½ in.	23 ft. 11 in.
Height	8 ft. 7½ in.	8 ft. 7½ in.
Wing area	323 sq. ft.	—
Weight (empty)	2,700 lb.	3,000 lb.
Useful load	1,800 lb.	1,750 lb.
Gross weight	4,500 lb.	4,750 lb.
Wing loading	13.9 lb./sq. ft.	14.7 lb./sq. ft.
Power loading	10.7 lb./h.p.	7.3 lb./h.p.

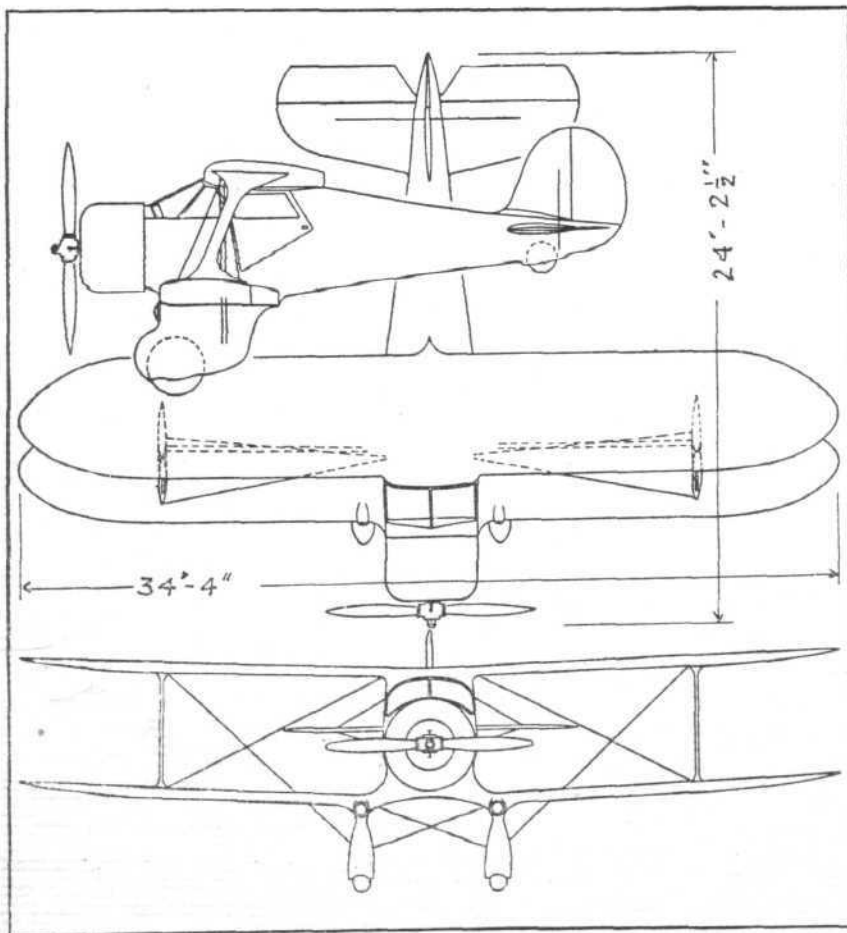
the pilots may be lowered for better vision, but the slope of the wind shield is such that rain drops will not collect and the air flow is so straight and fast that rain is literally wiped off. Vision for landing or taxiing is excellent, for when sitting in the front seats it is possible to see the ground directly ahead of the machine by looking down beside the engine instead of over it. The pilot's comfort has been very seriously studied. All instruments on the dashboard are literally at his finger-tip. The adjustable tail plane is electrically operated, and it is not necessary for the pilot to reach behind his head, under his seat or to pump, turn or pull anything while he is flying the machine. He merely touches a knob close by the throttle and an electric motor does the rest.

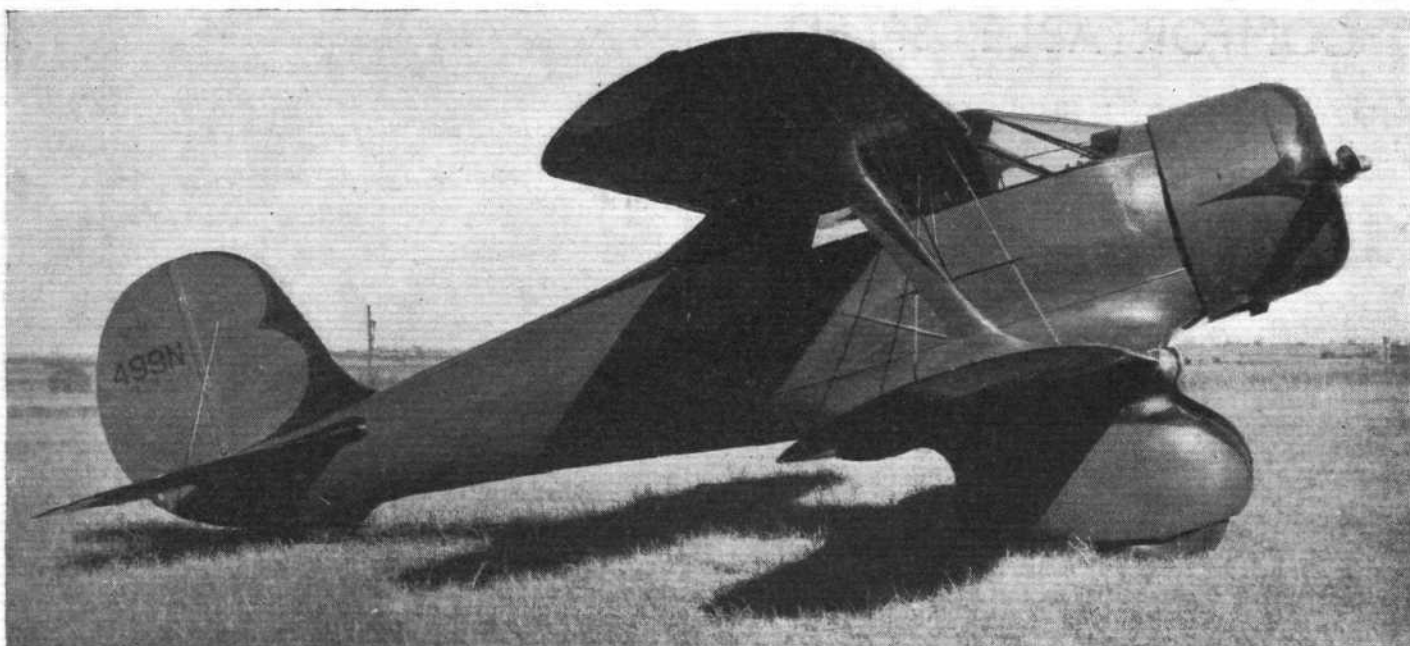
Ball Bearing Controls

The controls are well co-ordinated and all hinges, pulleys and push-pull tubes have double-seal ball bearings. The wing loading is lower than that of conventional aircraft possessing similar performance characteristics. Differentially operated ailerons of high aspect ratio run the full length of the lower wings. The mechanism gives an upward travel of 45 deg. and a downward travel of 15 deg. This, together with the Frise balances, eliminates any tendency to yaw into a turn when the ailerons are used to bring the wing up at high angles of attack. There is no definite stalling point, for beyond the angle at which a normal aircraft would stall the "Beechcraft" stays in perfect control.

In place of the normal trailing edge flaps a "decelerator" in the form of a split rudder is fitted. With the decelerator open little speed is gained when nosing down after coming in over high obstructions and the drag being well above and behind the centre of gravity helps to get the tail down and adds directional stability at low speeds. An interesting type of wing construction is employed which entails the use of chrome molybdenum steel tube spars of special shape with reinforcements forged on at points of greatest stress. The negative stagger puts the highest loads on the front spars which are deeper and stronger than those at the rear. By running the flying wires through the lower wing from the landing gear to the upper front spars, the loads in the wires and in the upper front spars are reduced, the landing gear is braced and the rigging may be changed by a simple adjustment at the rear spar without loosening any wires. The wing drag truss is made of tubular steel compression members and drawn steel tie rods.

Many private owners have had the unpleasant experience of discovering after the purchase of an aircraft that on the addition of night flying equipment, wireless or extra fuel tanks, they have not only spent a great deal of money, but have seriously decreased the performance of their aircraft and have cut down the baggage and passenger allowance. In the "Beechcraft" such equipment is considered an integral part of the machine from the earliest stages of the design. The standard fuel capacity is 145 gallons, which is sufficient for a cruising





THE "BEECHCRAFT": A later and smaller version than that shown is fitted with a retractable undercarriage.

range of about 1,000 miles in normal conditions. This fuel load may be carried without decreasing either the number of passengers or the amount of baggage normally carried.

As the result of co-operation between the Beech Aircraft Company and the Switlik Parachute & Equipment Company, seats as comfortable as the standard type, but with parachutes built in as part of the upholstery can be furnished.

While the landing gear is not retractable, in flight, the wheels drop to the fully extended position of the hydraulic shock absorbers, but may be pulled up electrically to the normal taxiing position. The mechanism effecting this operation is controlled by a lever beside the throttle and is so arranged that the throttle cannot be closed below cruising speed unless the landing gear lever is moved to the down position. Concealed in the rear of the large streamline fairings over the wheels are sumps for the fuel system. The fuel flows by gravity from the tanks into the sumps and is pumped thence by an engine driven fuel pump.

The front sections of the wheel fairings are easily removed for inspection and the changing of tyres. For the latter operation it is necessary to remove only two bolts. When fitted with the 420-h.p. Wright "Whirlwind" the machine is known as the model 17R. A more powerful power plant may, however, be installed, and the aircraft is then known as the model 17J. In either case the engine is enclosed in an N.A.C.A. cowling, which is in two sections. In the front section are baffles which direct the air flow to the cylinders and other points, while the rear section is hinged to give access to the engine.

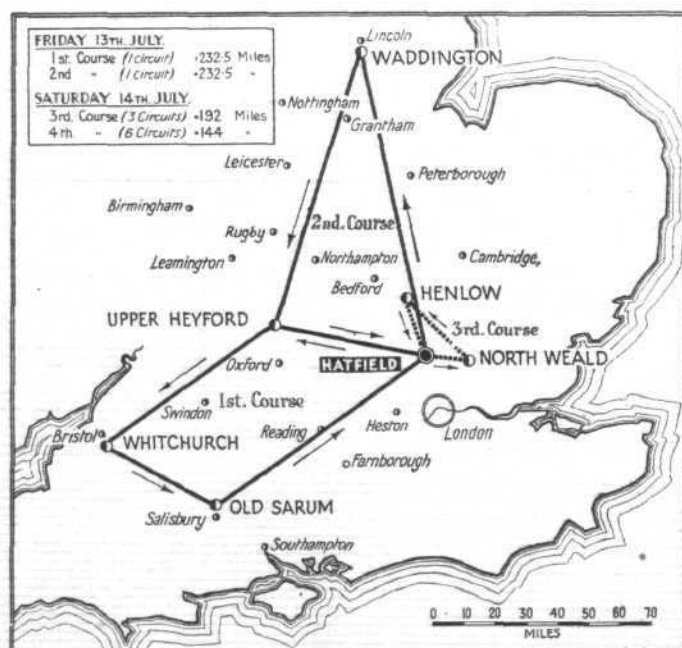
The latest news from the manufacturers is that they are producing a small "Beechcraft" using a Jacobs 225-h.p. engine. The top speed is 175 m.p.h., cruising speed 155 m.p.h., and landing speed 45 m.p.h. This type is fitted with a retractable undercarriage. The original "Beechcraft" has completed a tour of America, during which it travelled approximately 25,000 miles at temperatures from 20 deg. below zero to the heat of the southern desert regions, and in every respect behaved admirably.

KING'S CUP COURSE

Total Distance 801 Miles

THE Royal Aero Club has now announced details of the courses over which the race for the King's Cup will be flown this year. The race will be flown on two days, July 13th and 14th, with start and finish at the de Havilland aerodrome at Hatfield. The first day's courses total 465 miles, consisting of two circuits of 232.5 miles each. On the second day the total distance to be covered by competitors is rather smaller, 336 miles, divided into one course of 192 miles and one, the final, of 144 miles. Details of the final course have not yet been published, but it will consist of six laps of approximately 24 miles each, laid out in the vicinity of Hatfield. Special maps of this course will be issued to competitors.

An examination of the sketch map indicates that during the first day the courses are long and have to be covered once only. This means that competing machines will be seen at Hatfield at start and finish only. As the Friday's racing is by way of being eliminating trials, this matters little. On the Saturday, however, when the semi-final and final are flown, the courses are short, the first having to be flown three times and the final six times. This will give spectators an excellent opportunity to see the machines rounding the Hatfield turning point, and will enable them more readily to follow the progress of the race.



KING'S CUP, 1934: Sketch map of the courses. Details of the final course have not been announced, but it will consist of six laps of a 24-mile circuit in the vicinity of Hatfield.

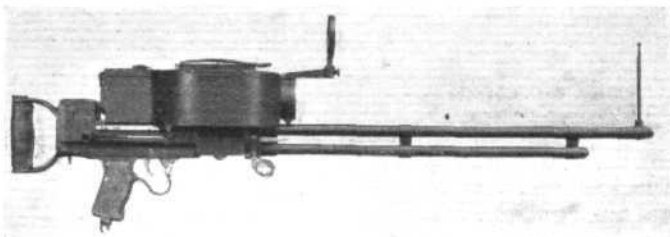
THE WILLIAMSON CAMERA GUN

In "Flight" of May 3rd last, the new Fairchild camera machine gun was described. That Britain is in no way behind other countries in the design of camera guns is indicated by the following description of the New Williamson type G.22 gun. For some years past the Williamson Manufacturing Co., Ltd., has made a name for itself with the "Eagle" camera. The company has now resumed the manufacture of camera guns.

AT first sight the Williamson G.22 camera gun might not appear to fulfil requirements in the same way that more elaborate and expensive foreign types have attempted. It is hand-operated for loading and firing and takes only one picture each time the trigger is pressed. Like the Fairchild, it may be adapted for use as a "fixed" or "observers'" gun.

On detailed consideration of the aims and objects of a camera gun, however, it will be seen that the G.22 not only provides all the information required by students of aerial gunnery, but gives it immediately and at a fraction of the cost of the cinematograph type of gun camera.

The G.22 gun is of exceptionally neat design, compact and streamlined. It measures 15½ in. by 3½ in. by 6 in., weighs 10 lb., and the picture size using 3½ in. by 2½ in. film is 2½ in. by 2½ in. The maximum film capacity is sixteen exposures. Each photograph is taken immediately the trigger is pressed, and a watch is reproduced on each picture. It may be noted from our photograph that this latter image has two impressions of the seconds hand. The first impression is made when the trigger is pressed and the second when the trigger is released. The number of seconds between the two impressions shows the time during which the trigger was pressed, and this information, together with the position of the aircraft in the graticule rings, provide all the data required by the gunner and his instructor. The size of the picture is such that results may be analysed and compared without the use of a special projecting apparatus as is required with cinematograph film. As it is essential to demonstrate to the gunner his mistakes while the mock combat is still fresh in his mind, special daylight developing tanks supplied with the camera permit inspection of the film within six minutes of landing. In fact, it is not necessary for the gunner to leave his

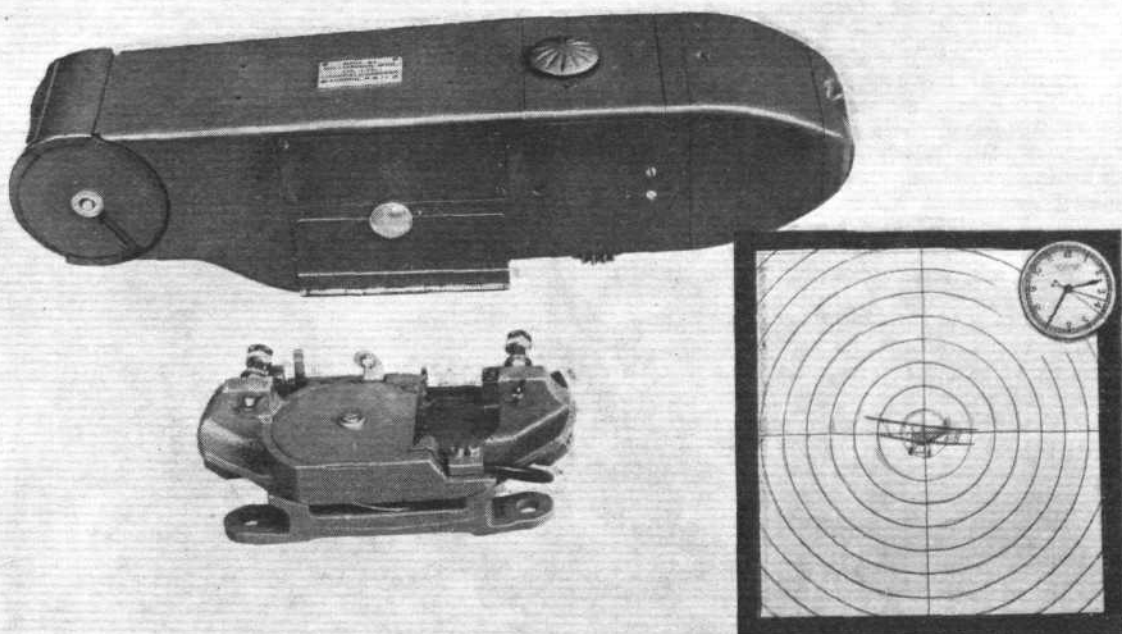


FOR OBSERVERS' USE : The Williamson G.22 mounted in the form of a Lewis Gun.

cockpit. About 3s. covers the total cost of the film and chemicals for each length exposed.

A special telephoto lens of 12 in. focal length is used with the Williamson patent Louvre shutter. This shutter gives a high speed with great efficiency and durability in a more compact form than would be possible with any other known form of shutter.

The mounting may be simply and quickly adjusted to line up the camera with the pilot's gun sights, and the camera may be detached and replaced without the necessity of readjustment. When used as for "fixed" gunnery practice, the camera gun is mounted in the usual fashion on a wing of the aircraft. In this position it is responsible for considerably less drag than more conventional types of camera guns. For observers' use the camera is made up to resemble the Service Lewis gun, and has the usual spade and pistol grips. It may then be used on standard gun rings. The operations necessary to change the film and fire the gun correspond to those required in actual warfare.



FOR GUNNERY INSTRUCTION : Showing the compactness of the Williamson G.22 camera gun and a specimen section of a film. Note the two impressions of the seconds hand on the watch face.

THE ROYAL AIR FORCE



London Gazette, May 8, 1934.

General Duties Branch

The follg. Acting Pilot Officers on probation are confirmed in rank and graded as Pilot Officers:—J. J. McCarthy (March 3); J. S. Bartlett, E. H. P. Clarke, P. H. Dutton, N. D. Gilbert-Smith, J. R. Gillman, W. T. King, F. M. Loudon, H. J. Maguire, S. T. Misselbrook, J. A. K. Pettit, F. C. Scott, G. P. Seymour-Price, C. R. Taylor, H. West (March 24).

The follg. Acting Pilot Officers on probation are graded as Pilot Officers on probation:—D. C. Oliver (March 11); H. W. A. Oloff de Wet (March 24). Lt. Com. M. Cursham, R.N., Flight Lt., R.A.F., ceases to be attached to the R.A.F. on return to Naval duty (May 1); Flt. Lt. E. A. McKinley-Hay is placed on the retired list on account of ill-health (May 6); F/O. J. S. Hindmarsh (Lt., R. Tank Corps) relinquishes his temporary commn. on resigning his Army commn. (April 30).

Stores Branch

The follg. Flying Officers on probation are confirmed in rank (April 20):—A. E. Harbot, M.B.E., R. A. Howes, M.B.E., H. W. C. Springham.

Medical Branch

The follg. are promoted with effect from May 1:—
Wing Commanders to be Group Captains: H. A. Treadgold, M.D., B.S., M.R.C.S., M.R.C.P., D. Ranken, M.B., M.S., F.R.C.S., L.R.C.P.; A. S. Glynn, M.B., Ch.B.; F. N. B. Smartt, M.B., B.Ch.
Squadron Leaders to be Wing Commanders: R. A. G. Elliott, M.B., B.Ch., D.P.H.; J. M. A. Costello, M.C., M.D., B.Ch.; P. H. Young, M.B., Ch.B.; P. T. Rutherford, O.B.E., L.R.C.P., and S. T. Montgomery, M.D., B.Ch., D.P.H.; H. L. Burton, M.B., B.S., D.P.M.
 Flt. Lt. (Hon. Sqd. Ldr.) W. S. Stalker, M.D., Ch.B., D.P.H., relinquishes his temporary commn. on completion of service (April 21).

ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

General Duties Branch

Flt. Lt. G. L. Hunting is promoted to the rank of Squadron Leader (May 8).

The follg. Flying Officers are promoted to the rank of Flight Lieutenants (May 8):—E. S. Osborn, H. Preston, J. H. C. Harrold, H. A. Howes, J. W. Duggan, C. K. Turner Hughes, L. Newcombe, H. F. Suren, C. K. Turner, G. W. Monk, D.F.C., J. C. K. Rogers, A. D. Bennett, H. L. Piper, F. T. K. Bullmore, V. S. W. Smyth, G. Wood, J. D. Richardson, H. G. Hamilton, H. Bailey, B. W. Figgins.

F/O. D. M. David is transferred from class A to class C (May 1); F/O. N. M. Hone is transferred from class AA (ii) to class C (August 25, 1933); Flt. Lt. E. L. Drew relinquishes his commn. on completion of service (Dec. 1, 1933) (substituted for the notification in the *Gazette* of April 24); Flt. Lt. J. A. Hollis relinquishes his commn. on completion of service and is permitted to retain his rank (Jan. 23); F/O. G. P. Jewett relinquishes his commn. on completion of service (April 19).

Stores Branch

The follg. Flying Officers are promoted to the rank of Flight Lieutenant (May 8):—R. Bassett, W. J. Eagle.

AUXILIARY AIR FORCE

General Duties Branch

No. 600 (CITY OF LONDON) (BOMBER) SQUADRON.—P/O. R. F. G. Lea is promoted to the rank of Flying Officer (Feb. 27).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders F. E. P. Barrington, to Cambridge University Air Squadron, 1.5.34, for duty as Chief Instructor, vice W/Cdr. F. P. Don. E. R. Pretzman, A.F.C., to Headquarters, R.A.F., Cranwell, 1.5.34, for duty as Officer-in-Charge, Administration, vice W/Cdr. G. E. Livock, D.F.C., A.F.C.

Stores Branch

Group Captain E. W. Havers, to No. 3 Stores Depot, Milton, 1.5.34, to command.

Medical Branch

Squadron Leader H. McW. Daniel, to Station Headquarters, Hendon, 1.5.34, for duty as Medical Officer in connection with the R.A.F. Display.

CADETS AND ATHLETES

Narrow victory for Woolwich this year in the Triangular Athletic Contest

HELD at the R.A.F. Stadium, Cranwell, the athletic battle opened under ideal, if somewhat warm, conditions, with a cool westerly breeze to relieve what would otherwise have been a baking sun. Those who hoped that records would be broken were, however, doomed to disappointment, as were the spectators on their home soil, for the final scores were: The Royal Military Academy, Woolwich, 69 points; the Royal Military College, Sandhurst, 67 points; and the Royal Air Force College, Cranwell, 53 points.

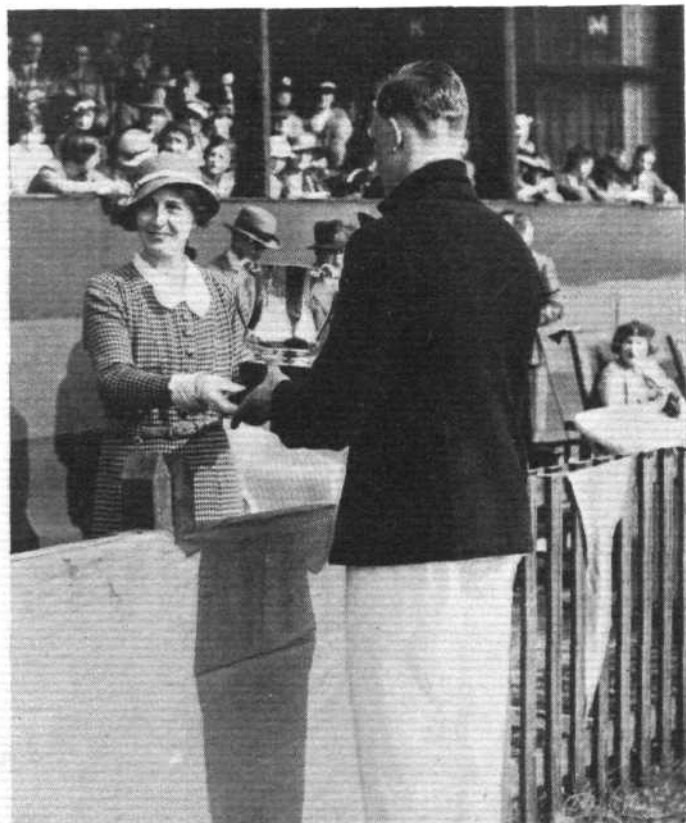
Lord Londonderry arrived in his new "Cadet" (very appropriately), escorted by a Hart of No. 24 (Communication) Squadron, piloted by F/O. O. P. Lascelles, who, incidentally, flew one of the C.F.S. machines at the Display last year.

Woolwich and Sandhurst each scored 8 points in the opening 100 yards' event—after one false start—with Cranwell 3 points behind. The race was won by J. S. S. Prest (Woolwich) in 10½ sec.

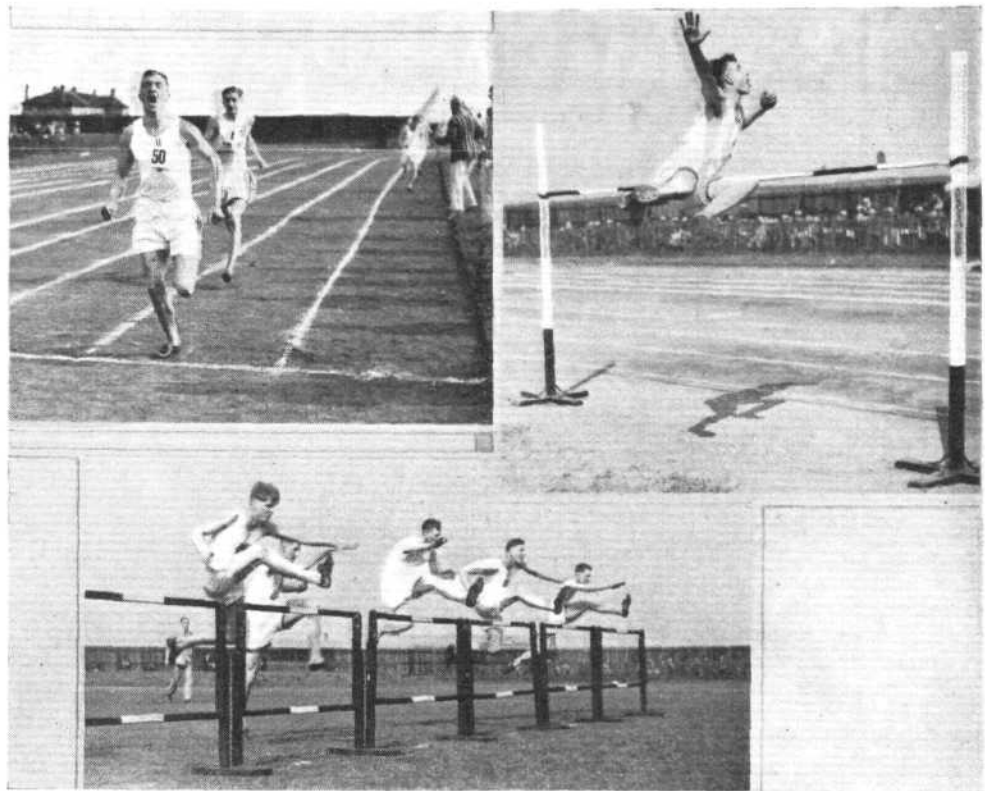
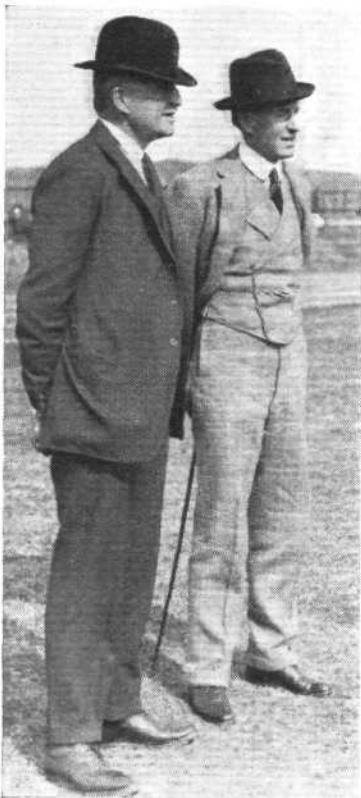
The High Jump resolved itself into a protracted duel between representatives of Woolwich and Sandhurst, who eventually tied, and Woolwich took the lead, to hold it until the seventh event, lose it, and then finally regain it. In the One Mile, J. R. Jeudwine (Cranwell), after running second, went into the lead on the last lap, to be unsuccessfully challenged only in the last hundred yards of the distance. This win was unfortunately counteracted by the placing of the other members of his team, so that Cranwell was still 6½ points behind Sandhurst.

Several brawny men could now be described in the background handling shot in preparation for the sixth event, while a gruelling Quarter Mile resulted in a win for Sandhurst. Woolwich and Sandhurst eventually tied in the matter of Weight Putting, with a distance of 37 ft. 5 in.

Now for a short space Sandhurst took the lead with a win in the 120 Yards Hurdles, and Cranwell was definitely out of it. The Two Miles was not a close race, but



Lady May Grosvenor presents to H. E. C. Boxer the Cup for the Best All-round Athlete at Cranwell. (FLIGHT Photo.)



LOOKING ON: Maj. Gen. A. A. Goschen, D.S.O., Commandant, R.M.A., Woolwich, and Lord Londonderry, Secretary of State for Air, interested spectators of the Athletic Contest at Cranwell—R. G. Yaxley (Cranwell) winning the Half-Mile (top left); L. Roney-Dougal (Woolwich), who tied with A. P. D. Yorke (Woolwich) in the High Jump (top right); and over the Hurdles in fine style. (FLIGHT Photos.)

C. J. C. Bowen and A. P. D. Yorke, both Woolwich men, who finished first and second, allowed G. F. L. Lyman-Dixon (Sandhurst) to lead for most of the distance before "opening up."

This gave Woolwich a two-point lead in the match, and the Half Mile was run in an atmosphere of tense excitement. R. G. Yaxley (Cranwell) made a great effort, and won from B. F. Blood (Sandhurst), but a third place for Woolwich was enough to allow them to win the Challenge Shield. Results:—

100 Yards.—J. S. S. Prest (Woolwich), 1; F. R. Dickinson (Sandhurst), 2; D. W. Balden (Cranwell), 3. 10 1-5 sec.

High Jump.—L. Roney-Dougal (Woolwich) and N. G. Williams (Sandhurst) tied at 5 ft. 7 in., 1; W. G. S. Brooke (Woolwich), 3.

One Mile.—J. R. Jeudwine (Cranwell), 1; R. K. Constantine (Sandhurst), 2; G. E. Baker-Cresswell (Woolwich), 3. 4 min. 34 1-5 sec.

Long Jump.—R. C. Atkinson (Sandhurst), 21 ft. 2½ in., 1; G. C. Pearson (Woolwich), 2; R. L. France (Woolwich), 3.

Quarter-mile.—J. D. Moffatt (Sandhurst), 1; J. S. S. Prest (Woolwich), 2; P. W. Ashton (Cranwell), 3. 52 1-5 sec.

Putting the Weight.—R. L. France (Woolwich), 37 ft. 5 in., 1; S. D. W. Seaver (Sandhurst), 2; D. Seward (Cranwell), 3.

120 Yards Hurdles.—A. M. H. Gregory-Hood (Sandhurst), 1; H. E. C. Boxer (Cranwell), 2; G. H. Steele (Sandhurst), 3. 16 2-5 sec.

Two miles.—C. J. C. Bowen (Woolwich), 1; A. P. D. Yorke (Woolwich), 2; J. de G. Tatham-Warter (Sandhurst), 3. 10 min. 22 sec.

Half-mile.—R. G. Yaxley (Cranwell), 1; B. F. Blood (Sandhurst), 2; N. B. C. Teacher (Woolwich), 3. 2 min. 4 4-5 sec.

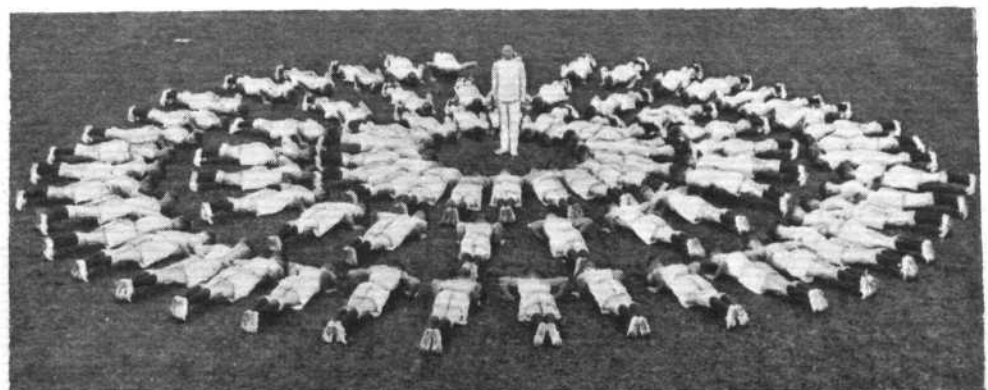
Result.—R.M.A., Woolwich (69 pts.), 1; R.M.C., Sandhurst (67 pts.), 2; R.A.F. Cadet College, Cranwell (53 pts.), 3.

R.A.F. DISPLAY, 1935—"NEW EVENTS" COMPETITION.

ALL ranks of the Royal Air Force, the R.A.F. Reserve (including the Special Reserve), and the Auxiliary Air Force, as well as civilians employed at Air Ministry establishments and R.A.F. units, are invited to submit suggestions for new events for production in the R.A.F. Display. The term "new event" covers any event in which aircraft are used, and includes the Set Piece. Suggested "events" must be practical and be capable of production without undue expense as regards setting. Events should be so designed as to be visible to as many of the spectators as possible and, with the exception of the Set Piece, should not rely for effect upon action on the ground. There is

no limit to the number of suggestions which may be submitted by one competitor. A prize of £5 will be awarded for each suggestion approved for adoption by the Display Committee. If, however, a suggestion is considered by the Display Committee to be worthy of inclusion in the programme, but not sufficiently worked out in detail, they reserve the right to assess the amount of the prize to be awarded, which will not be of a less value than £2. The Display Committee's decision is to be regarded as final. Suggestions are to reach the Secretary, Flying Sub-Committee, Hillingdon House, R.A.F. Station, Uxbridge, Middlesex, not later than August 17, 1934.

THE BULL'S-EYE: The Royal Air Force Display party rehearse at the R.A.F. School of Physical Training, Uxbridge, for the Royal Naval, Military and Air Force Tournament, which opens to-day at Olympia.



The Industry

BROWN BROS., LTD.

BBROWN BROS., LTD., have recently enlarged the scope of their business by the addition of a special department for the supply of steel, duralumin and other metals to all aircraft specifications.

AERIAL SURVEY

IT is understood that the proposals approved by the Director-General of the Ordnance Survey for the aerial survey of sixteen million acres in England and Wales were submitted by H. Hemming & Partners, Ltd., and its subsidiary, Economic Air Survey, Ltd.

FLYING TADPOLES

WITH reference to the paragraph published in *FLIGHT* for April 19 last concerning the small "Tadpole" flying models, we are asked to state that these are manufactured by International Model Aircraft, Ltd., of Morden, and not by Lines Bros., Ltd., who are the selling agents for these models.

A NEW WRIGHTSON COMPANY

WRIGHTSON AIRCRAFT SALES, LTD., is the name of a new company that has just been formed, with the object of taking over the sales and brokerage business of Wrightson & Pearse. The Directors are: R. V. Wrightson, G. A. R. Malcolm, A. G. N. Wynne-Eaton, and G. G. W. Farquharson. This company has also obtained the agency for the new British Klemm machines, and we understand that they will be demonstrating the "Swallow" at Heston, where the company has its offices.

THE SKYBIRD LEAGUE

IT has been decided to accept, under certain conditions, associated members to the Skybird League. A distinctive badge will be issued. Full particulars and application form may be obtained from 3, Aldermanbury Avenue, London, E.C.2. With reference to the photograph published in *FLIGHT* for May 3, showing Capt. Broad presenting the "Skybird" Runner-up Cup to Club 100, it should be noted that this club is at Walton-on-Thames and not Westcliffe-on-Sea. The Challenge Cup was won by 98 Club of Westcliffe-on-Sea.

THE NEW SERVICE

NOW that the de Havilland service department has been moved, lock, stock and barrel, to Hatfield aerodrome, the time is ripe for a few remarks on the company's comprehensive arrangements. These can include housing of machines, routine examination, refuelling, cleaning, and general maintenance, as well as repairs from minor adjustments to complete overhauls.

But the most interesting feature is the issue of a list of standard charges which have now been extended to cover "Gipsy," "Puss," "Leopard" and "Fox Moths," as well as the "Dragon." The company was, we believe, the first in the world to publish a scale for aircraft maintenance. By means of a system of standing orders for maintenance, a private owner can be relieved of all worry.

Hatfield aerodrome, though 19 miles north of Hyde Park Corner, can be reached quickly by arterial road, and has the advantage of being well outside the London fog area.

MR. BRUCE RETIRES

HIS numerous friends in the aircraft industry will learn with regret that Mr. Robert A. Bruce, O.B.E., has resigned from the Board of Petters, Ltd., and also from

his position as Managing Director to the Westland Aircraft Works. The resignations will take effect from June 30 next. Mr. Bruce has offered his services in a consultative and advisory capacity in connection with aircraft, and this offer has been accepted. Only those in close touch with the firm know how much Westland aircraft have owed to the technical genius of Mr. Bruce, and it is good news to learn that he will continue to advise on aircraft engineering matters. Mr. W. E. W. Petter has been co-opted by the Board of Directors. Mr. Petter, who is the eldest son of the chairman, was educated at Marlborough and Caius College, Cambridge. He was awarded the Salomons Scholarship in 1928, and obtained first-class honours in the Mechanical Tripos in 1929. During the past two years Mr. Petter has been acting as personal assistant to Mr. Bruce.

PUBLICATIONS RECEIVED

The Scarlet Angel. By Alban Ali. Price 10s. 6d. net. London: Gerald Duckworth & Co., Ltd.

Metal Aircraft Construction. By M. Langley. Price 15s. net. London: Sir Isaac Pitman & Sons, Ltd.

Notions de Photogrammétrie. Terrestre et Aérienne. By Ch. Abdullah. Librairie J. B. Baillière et Fils, 19, Rue Hautefeuille, Paris.

Société Française Hispano Suiza. Review et Bulletin Technique. April, 1934.

My Air Armada. By Italo Balbo, translated by Gerald Griffin. Price 18s. net. London: Hurst & Blackett, 34, Paternoster Row, E.C.4.

Aerodynamic Theory. Volume 1. By William Frederick Durand. Berlin: Julius Springer, Linkstrasse 23-24. Price, bound, 20 marks.

Punch Summer Number, 1934. Price 1s. London: 10, Bouverie Street, E.C.4.

NEW COMPANIES REGISTERED

WALSALL AIRCRAFT AND MOTORS, LTD.—Capital, £3,000 in 2,000 first ordinary shares of £1 each and 20,000 second ordinary shares of 1s. each. Objects: To carry on the business of manufacturers of and dealers in aeroplanes, seaplanes, flying boats, airships, balloons, parachutes, gliding machines, and other machines or apparatus designed for aerial transit, motor cars and cars, motor and other cycles and vehicles generally, launches, boats and other conveyances, flying clothing and equipment, etc. First directors are: Edward A. Bayley, "Lindisfarne," Heathfield, Sussex, aeronautical engineer; Charles Bilson, "Fernleigh," Punnetts Town, Sussex, secretary (both permanent, subject to each holding 10,000 second ordinary shares). Qualification of directors: 10,000 second ordinary or 100 first ordinary shares. Secretary: C. Bilson.

EAST ANGLIAN AERO CLUB (1934), LTD., The Club House, Abridge Aerodrome, Essex.—Capital £1,000 in 1,000 5 per cent. preference shares of £1 each. To establish, maintain, conduct and control a flying club to enable members to learn and practise the art of flying, etc. First directors: Wilfred J. Lewington, "Branscombe," Gilbert St., Waltham Cross. Herbert S. Linwood, 31, Hertford Road, Lower Edmonton, H. 19. Bertie Padfield, Home Farm, Chigwell. Norman Kilian, The Elms, Ferndale Road, Enfield Wash.

INCREASE OF CAPITAL

AIRCRAFT & GENERAL FINANCE CORPORATION, LTD., Bush House, Aldwych, W.C.2. The nominal capital has been increased by the addition of £8,000 in £1 ordinary shares beyond the registered capital of £2,000.

PATENT AERONAUTICAL SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

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- 29,247. SPERRY GYROSCOPE Co., Inc. Systems for the automatic steering of dirigible craft. (408,697.)
- 29,270. F. S. BARNWELL and BRISTOL AEROPLANE Co., LTD. Airscrew hubs. (408,698.)

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- 5,780. BENDIX AVIATION CORPORATION. Impulse-driving mechanism. (408,785.)
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